MarScC
GC856
0735
no.78-13
cop.2

of

# OCEANOGRAPHY

OSU

**Optical, Hydrographic and Chemical Observations in the Monterey Bay Area during May and September 1977**

by
J. Ronald V. Zaneveld, James C. Kitchen, Robert Bartz, David Menzies, Sandy Moore, Richard Spinrad and Hasong Pak

National Aeronautics and Space Administration Contract NAS5-23738

Reference 78-13 August 1978

OREGON STATE UNIVERSITY

GC856
O735
no. 78-13
cop. 2
Man Sci

# OPTICAL, HYDROGRAPHIC AND CHEMICAL OBSERVATIONS IN THE MONTEREY BAY AREA DURING MAY AND SEPTEMBER 1977.

National Aeronautics and Space
Administration Contract NAS5-23738

by

J. Ronald V. Zaneveld, James C. Kitchen,
Robert Bartz, David Menzies, Sandy Moore,
Richard Spinrad and Hasong Pak

School of Oceanography
Oregon State University
Corvallis, Oregon 97331

Ref. 78-13
August 1978

Ross Heath
Dean

Acknowledgments

The authors wish to thank the captain and the crew of the R/V Acania for their help in making the cruises a success. The work of the scientific personnel is also appreciated. The typing was done by Gail Henwood and Gayle Cameron.

The work was supported by the National Aeronautics and Space Administration under contract NAS 5-23738.

TABLE OF CONTENTS


| | Page |
|---|---|
| Introduction | 1 |
| Station Location Charts | 3 |
| Summary of Data | 23 |
| Hydrographic and Chemical Data | 27 |
| Particle Size Distributions | 89 |
| Spectral Light Scattering Data | 111 |
| Near-Forward Angle Scattering Measurements NASA2 | 137 |
| Spectral Beam Transmissometer Data | 159 |

LIST OF FIGURES


| Figure | | Page |
|---|---|---|
| 1 | Station Location Chart for 2nd, 3rd, May, 1977 | 5 |
| 2 | Station Location Chart for 4th May, 1977 | 6 |
| 3 | Station Location Chart for 5th, 7th May, 1977 | 7 |
| 4 | Station Location Chart for 6th May, 1977 | 8 |
| 5 | Station Location Chart for 9th May, 1977 | 9 |
| 6 | Station Location Chart for 10th May, 1977 | 10 |
| 7 | Station Location Chart for 11th May, 1977 | 11 |
| 8 | Station Location Chart for 12th, 13th May, 1977 | 12 |
| 9 | Station Location Chart for 6th, 7th September, 1977 | 13 |
| 10 | Station Location Chart for 8th September, 1977 | 14 |
| 11 | Station Location Chart for 9th September, 1977 | 15 |
| 12 | Station Location Chart for 10th September, 1977 | 16 |
| 13 | Station Location Chart for 11th September, 1977 | 17 |
| 14 | Station Location Chart for 12th September, 1977 | 18 |
| 15 | Station Location Chart for 13th September, 1977 | 19 |
| 16 | Station Location Chart for 14th September, 1977 | 20 |
| 17 | Station Location Chart for 15th September, 1977 | 21 |
| 18 | Station Location Chart for 16th September, 1977 | 22 |
| 19 | Vertical Geometry of Photodector System | 118 |
| 20 | Horizontal Geometry of Photodector System | 119 |
| 21 | Spectral "C" Meter Block Diagram | 163 |

## LIST OF TABLES


| Table | | Page |
|---|---|---|
| I | Summary of Data | 25 |
| II | Hydrographic and Chemical Data | 33 |
| III | Particle Size Distributions: NASA1 | 93 |
| IV | Particle Size Distributions: NASA2 | 102 |
| V | Particle Size Distributions: NPGS | 107 |
| VI | Neutral Density Filter Factors and the relative transmission of working standard | 116 |
| VII | Spectral Light Scattering Data | 120 |
| VIII | Near-Forward Angle Scattering Measurements | 141 |
| IX | Spectral Beam Transmission: NASA1 | 164 |
| X | Spectral Beam Transmission: NASA2 | 171 |

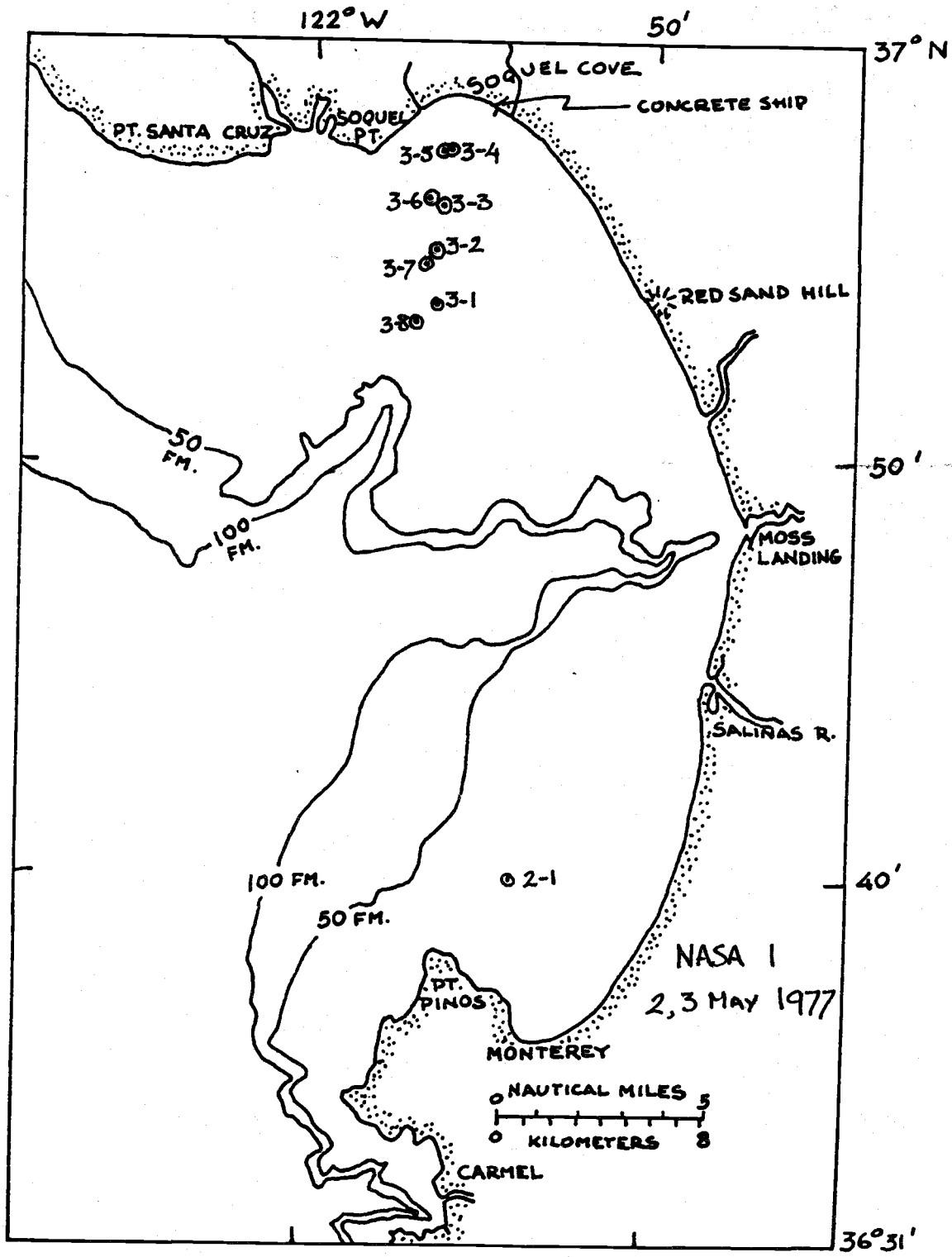
## Introduction

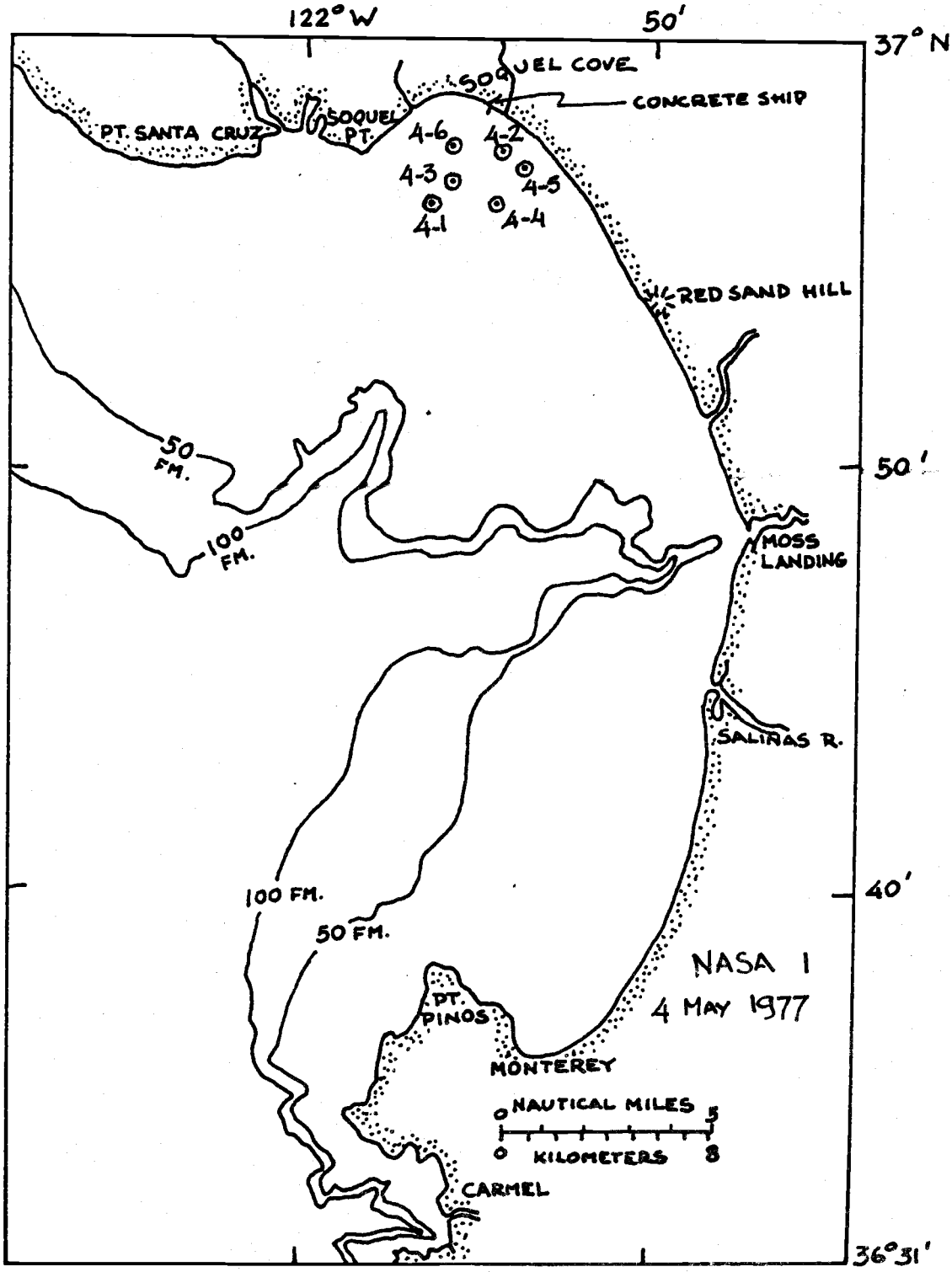
During May and September of 1978, cruises were made in Monterey Bay to study the relationship of ocean color spectra measured by aircraft and *in situ* optical, hydrographic, and chemical parameters. These cruises were carried out by the Oregon State University optical oceanography group and by the Naval Postgraduate School optical oceanography group in cooperation with investigators from the National Aeronautics and Space Administration. This report contains the data taken by the Oregon State University group. Comparison data reports will be issued by the Naval Postgraduate School and NASA. The NPGS ship R/V Acania was used for all oceanographic measurements.

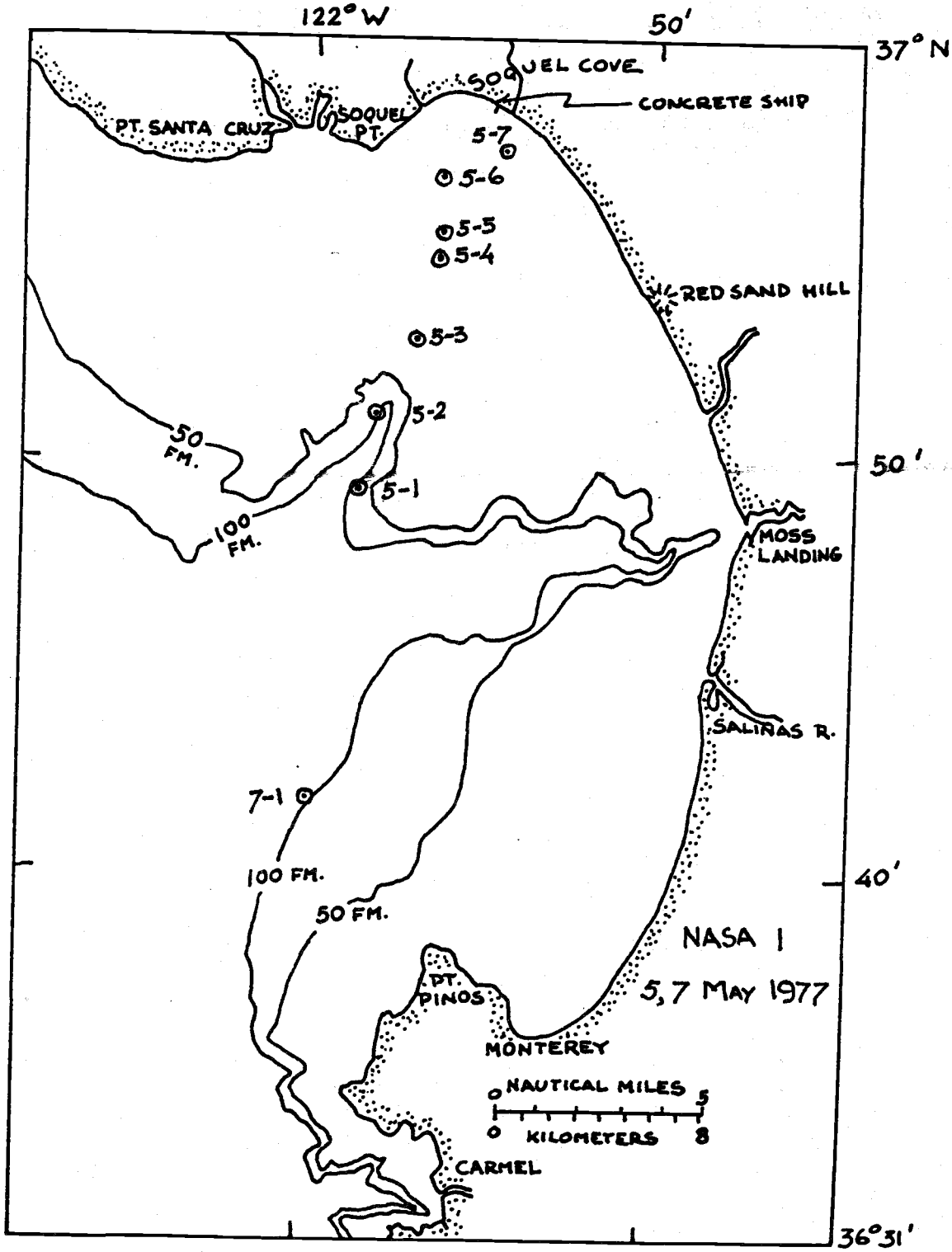
The first cruise, NASA 1, was undertaken from May 2 to May 13, 1977. The second cruise, NASA 2, ran from September 6 to September 16, 1977. Cruise tracks are shown on Figures 1 through 18. Table I shows the types of oceanographic data gathered on the two cruises that are present in this data report. In all, some 150 stations were taken.

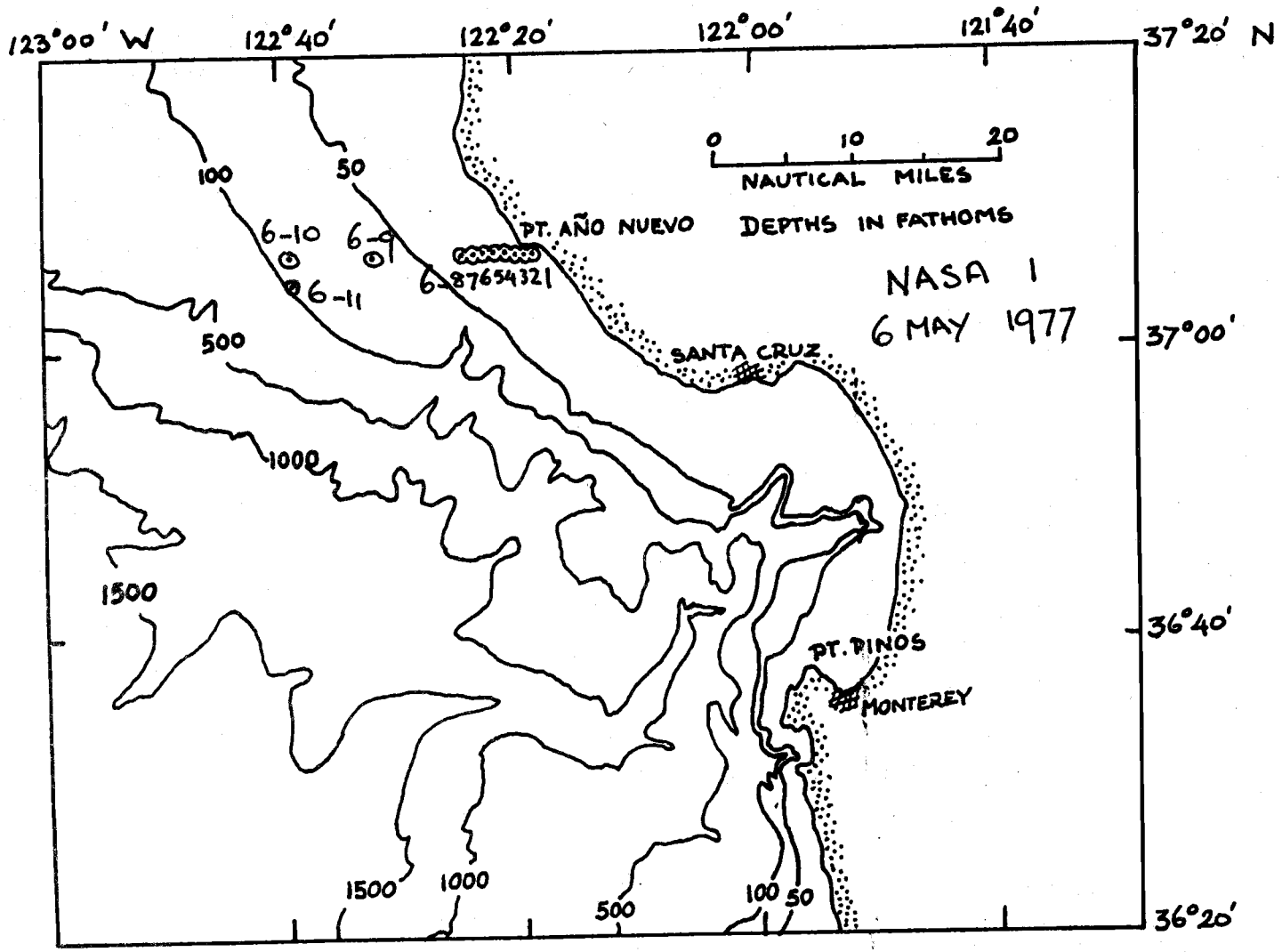
A description of the accuracy of the data and the method of tabulation can be found just before the data listings of the particular type of data.

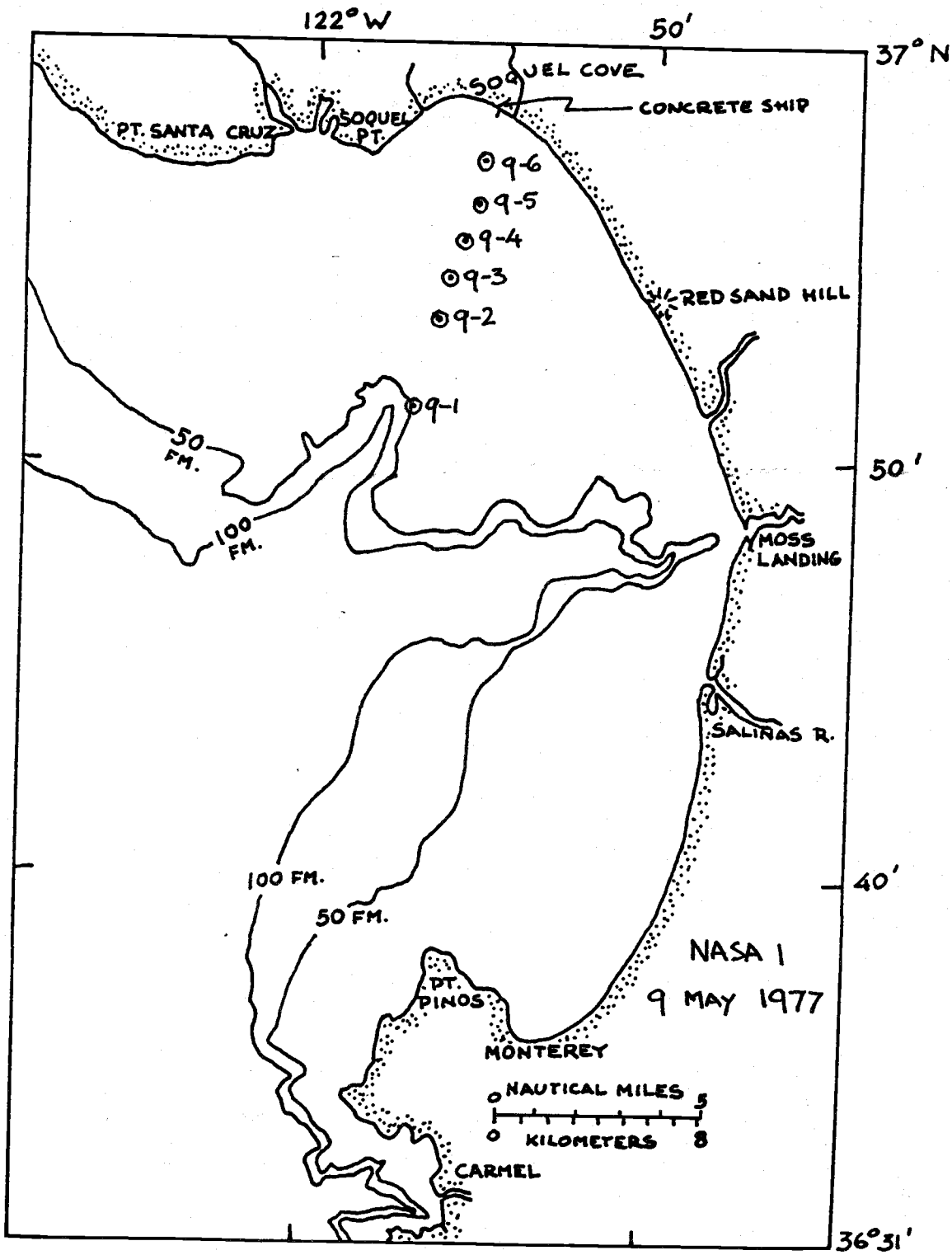
# STATION LOCATION CHARTS

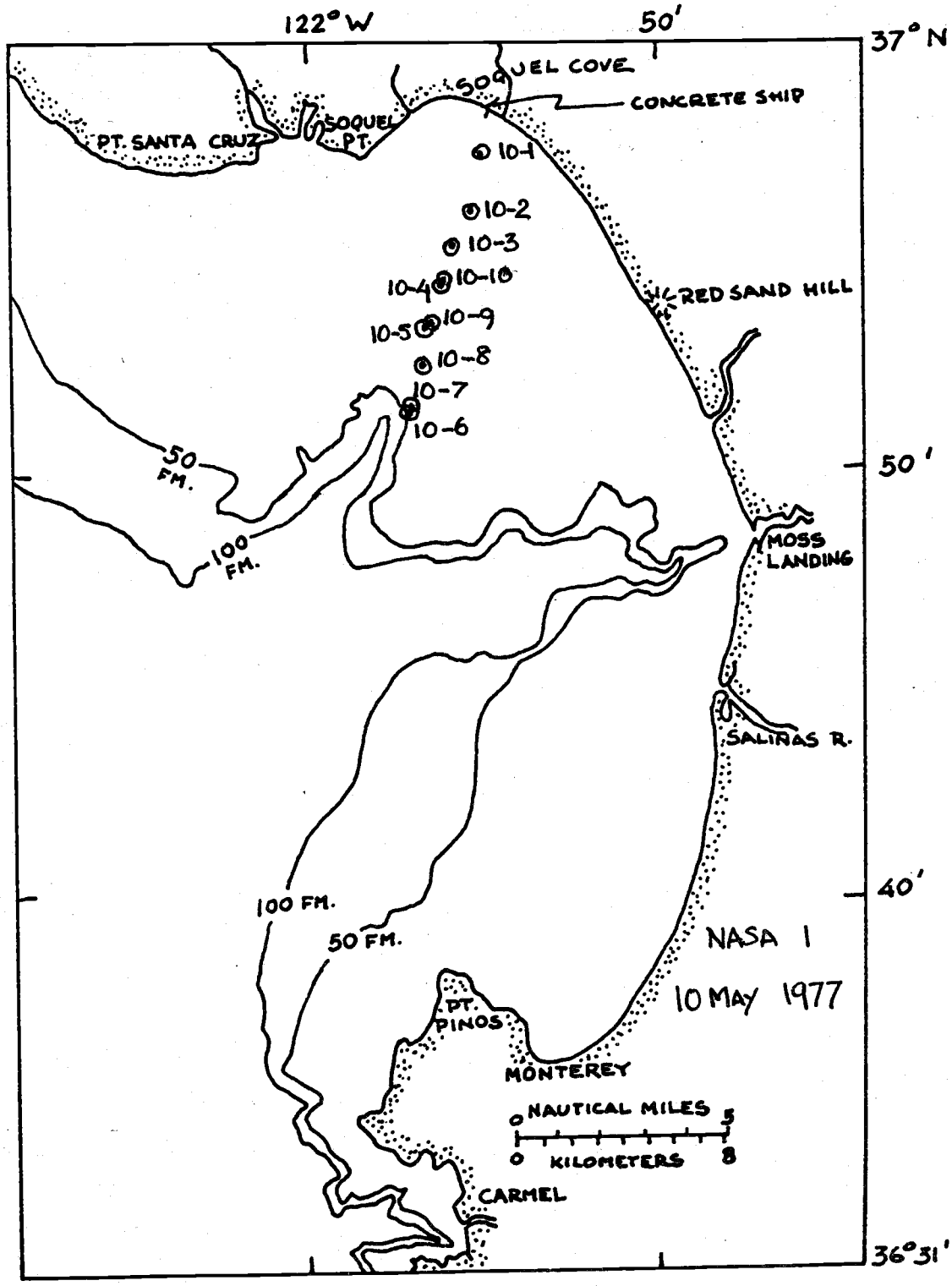

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
3-5
3-4
3-6
3-3
3-7
3-2
3-8
3-1
RED SAND HILL
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
100 FM.
50 FM.
2-1
40'
NASA 1
2,3 MAY 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'

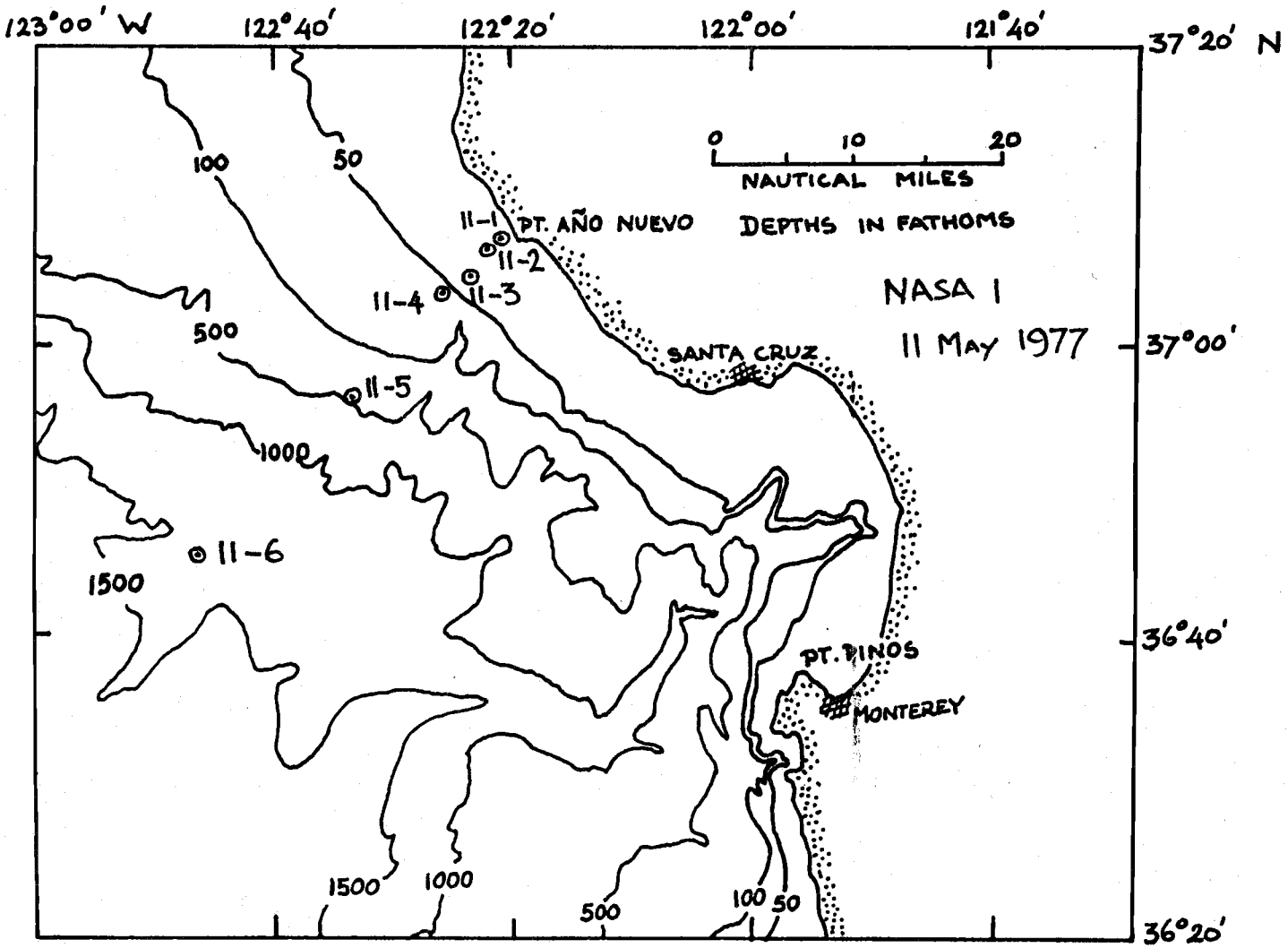

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
4-6
4-2
4-3
4-5
4-1
4-4
RED SAND HILL
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
100 FM.
50 FM.
40'
NASA 1
4 MAY 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'

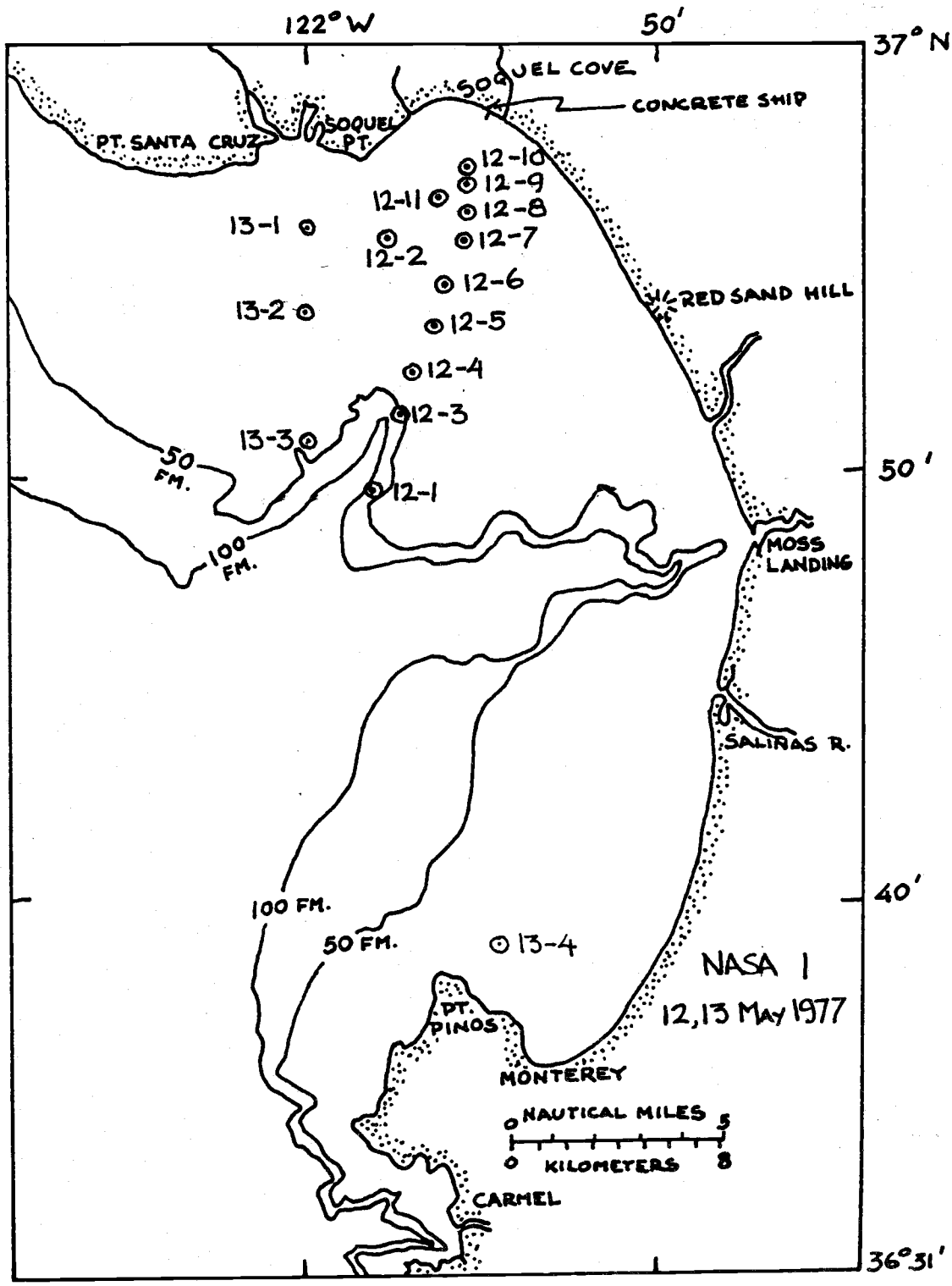

122° W
50'
37° N
50'
40'
36°31'
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
5-7
5-6
5-5
5-4
RED SAND HILL
5-3
5-2
5-1
50 FM.
100 FM.
MOSS LANDING
SALINAS R.
7-1
100 FM.
50 FM.
NASA 1
5,7 MAY 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL

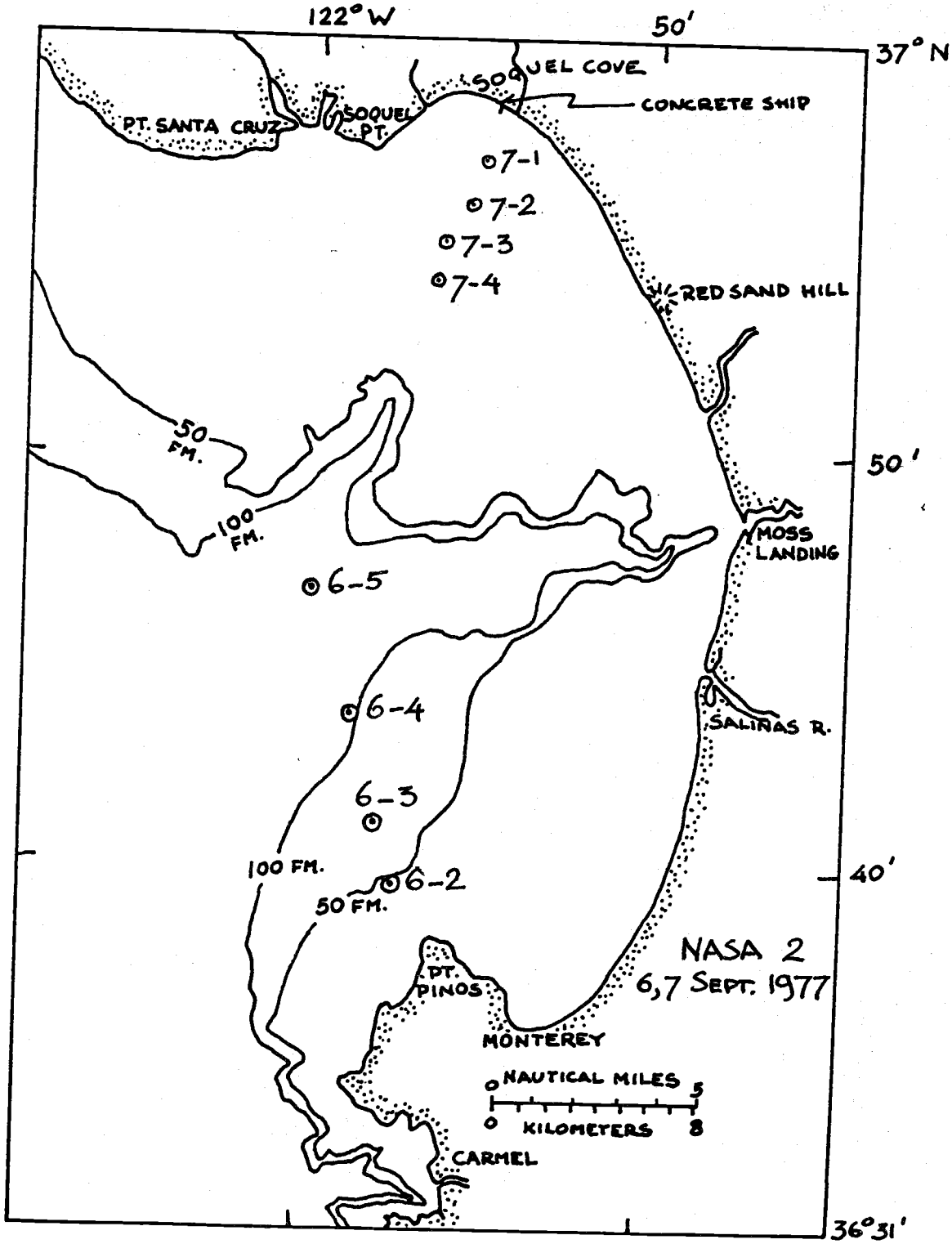

123°00' W
122°40'
122°20'
122°00'
121°40'
37°20' N
37°00'
36°40'
36°20'
0 10 20
NAUTICAL MILES
DEPTHS IN FATHOMS
NASA 1
6 MAY 1977
PT. AÑO NUEVO
SANTA CRUZ
PT. PINOS
MONTEREY
6-10
6-9
6-11
6-87654321
100
50
500
1000
1500

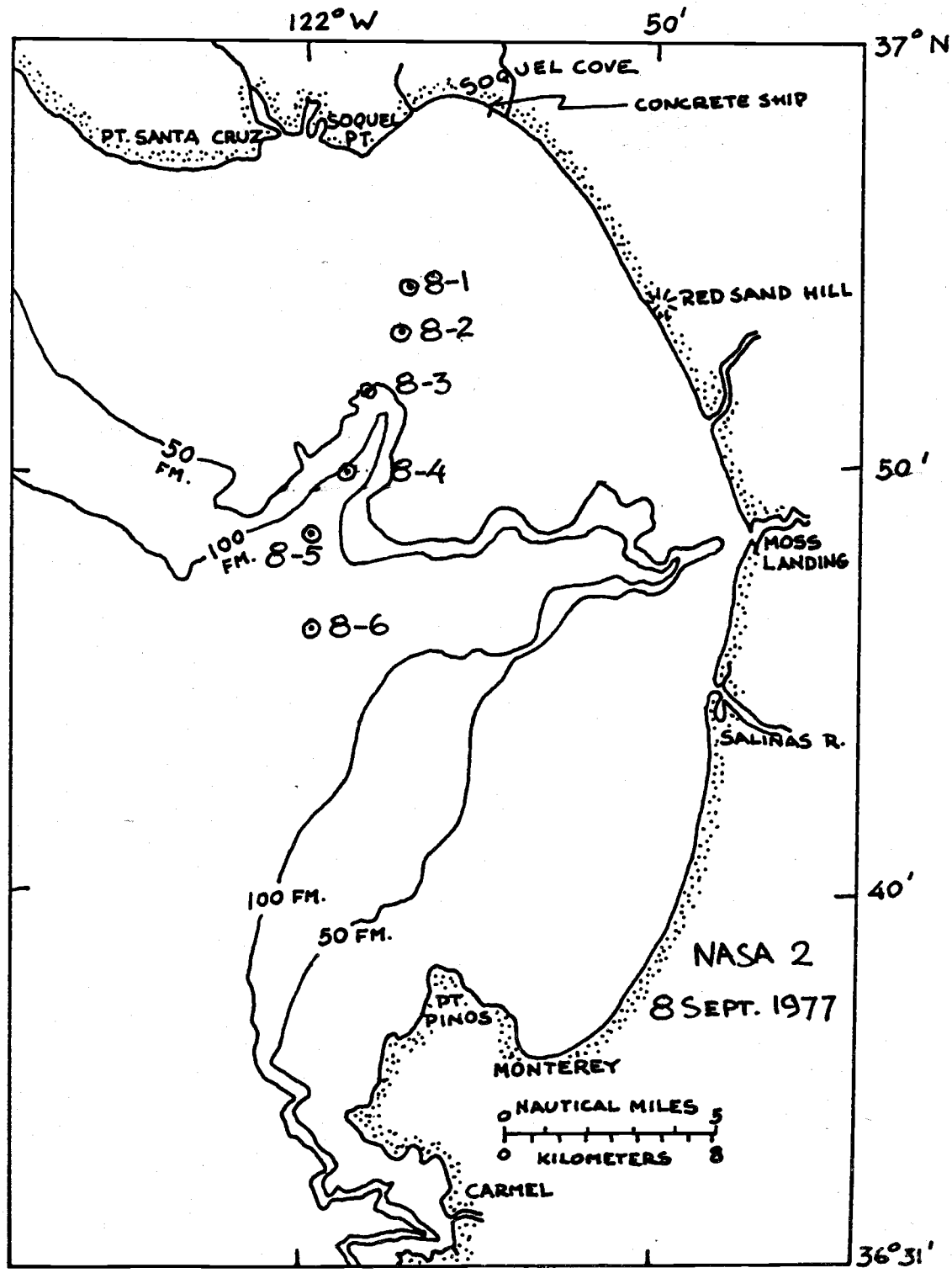

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
9-6
9-5
9-4
9-3
9-2
RED SAND HILL
9-1
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
100 FM.
50 FM.
40'
NASA 1
9 MAY 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
0
5
KILOMETERS
0
8
CARMEL
36°31'

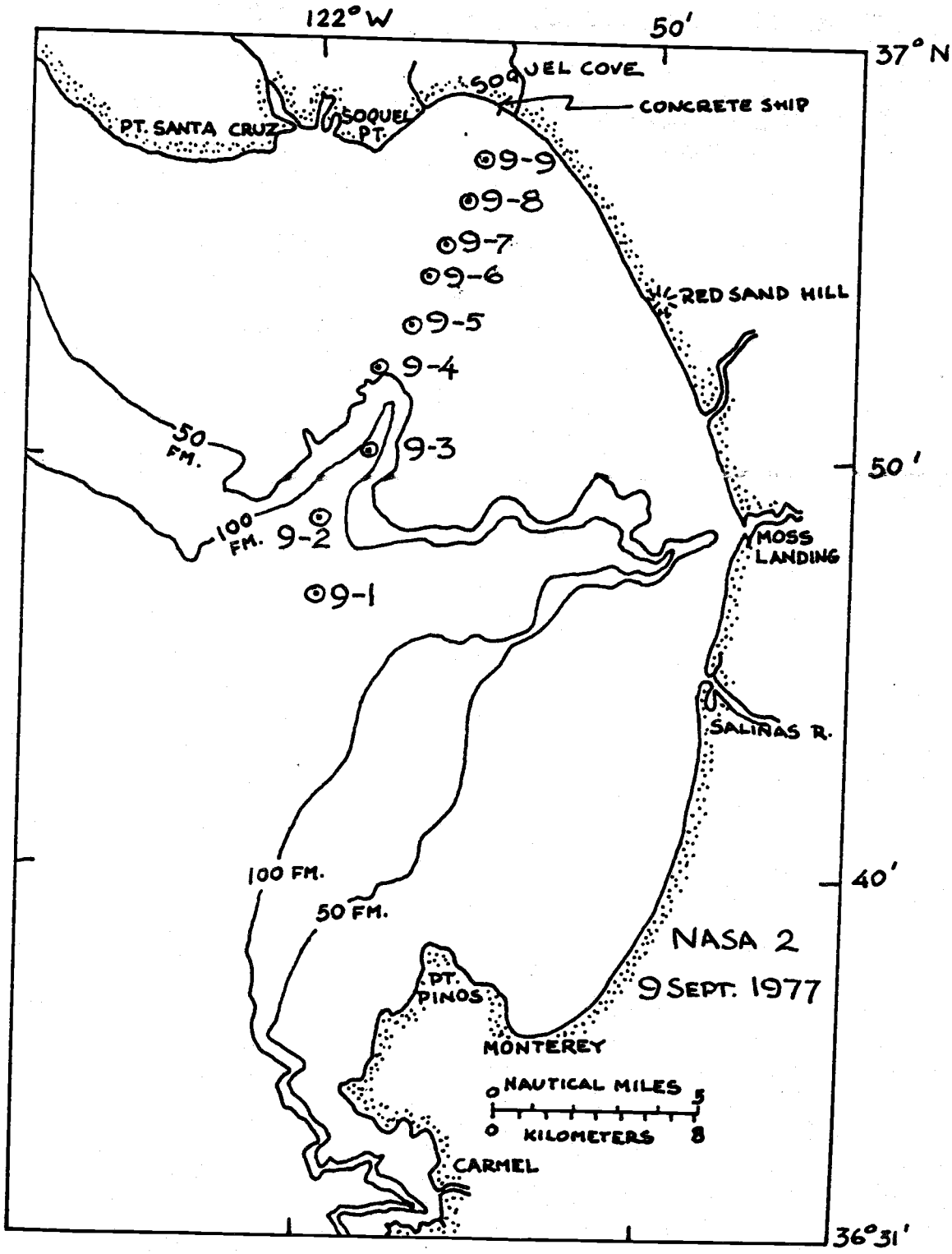

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
10-1
10-2
10-3
10-4
10-10
10-5
10-9
10-8
10-7
10-6
RED SAND HILL
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
40'
100 FM.
50 FM.
NASA 1
10 MAY 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'

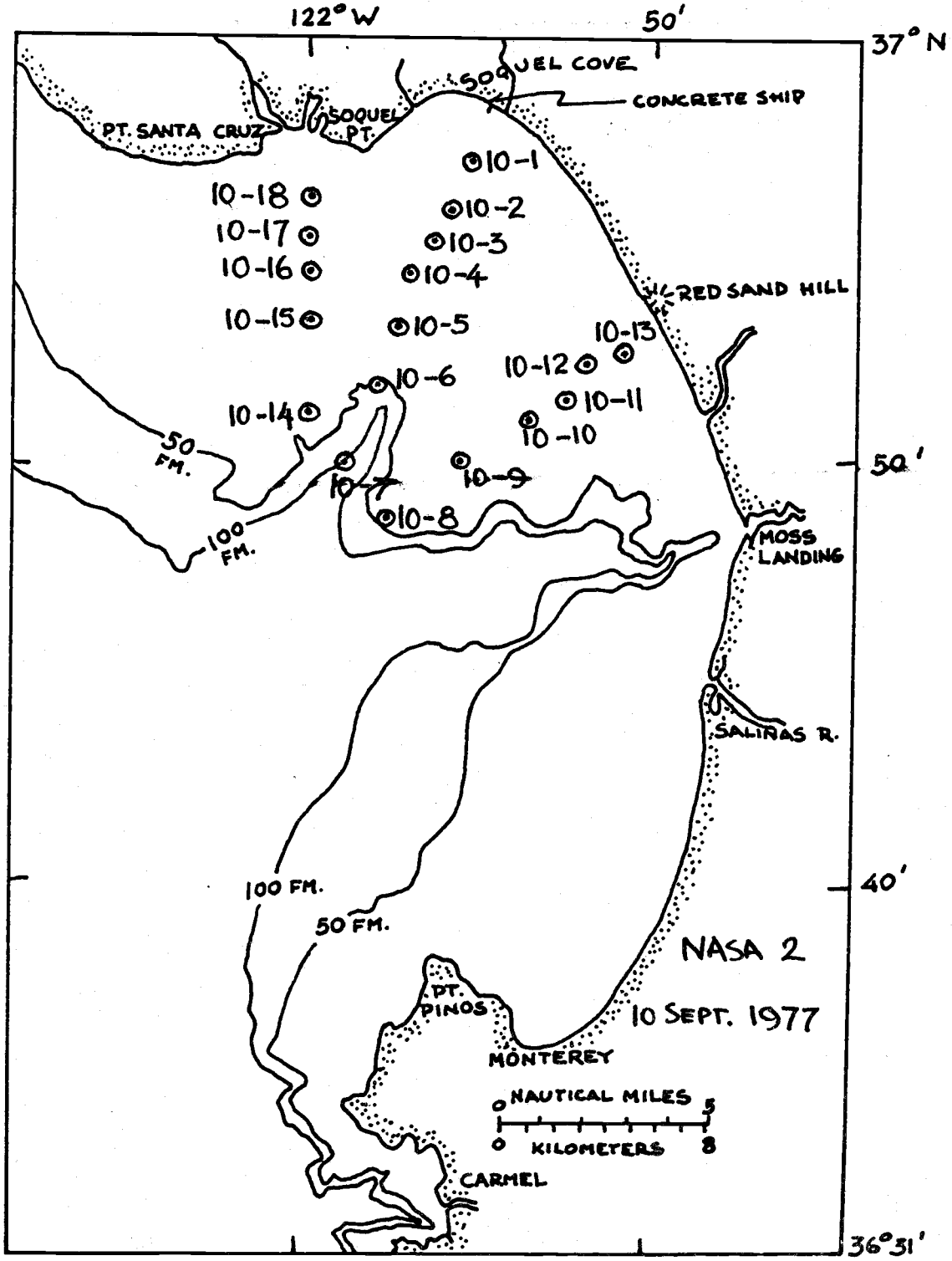

123°00' W
122°40'
122°20'
122°00'
121°40'
37°20' N
37°00'
36°40'
36°20'
0 10 20
NAUTICAL MILES
DEPTHS IN FATHOMS
NASA I
11 MAY 1977
PT. AÑO NUEVO
SANTA CRUZ
PT. PINOS
MONTEREY
11-1
11-2
11-3
11-4
11-5
11-6
100
50
500
1000
1500

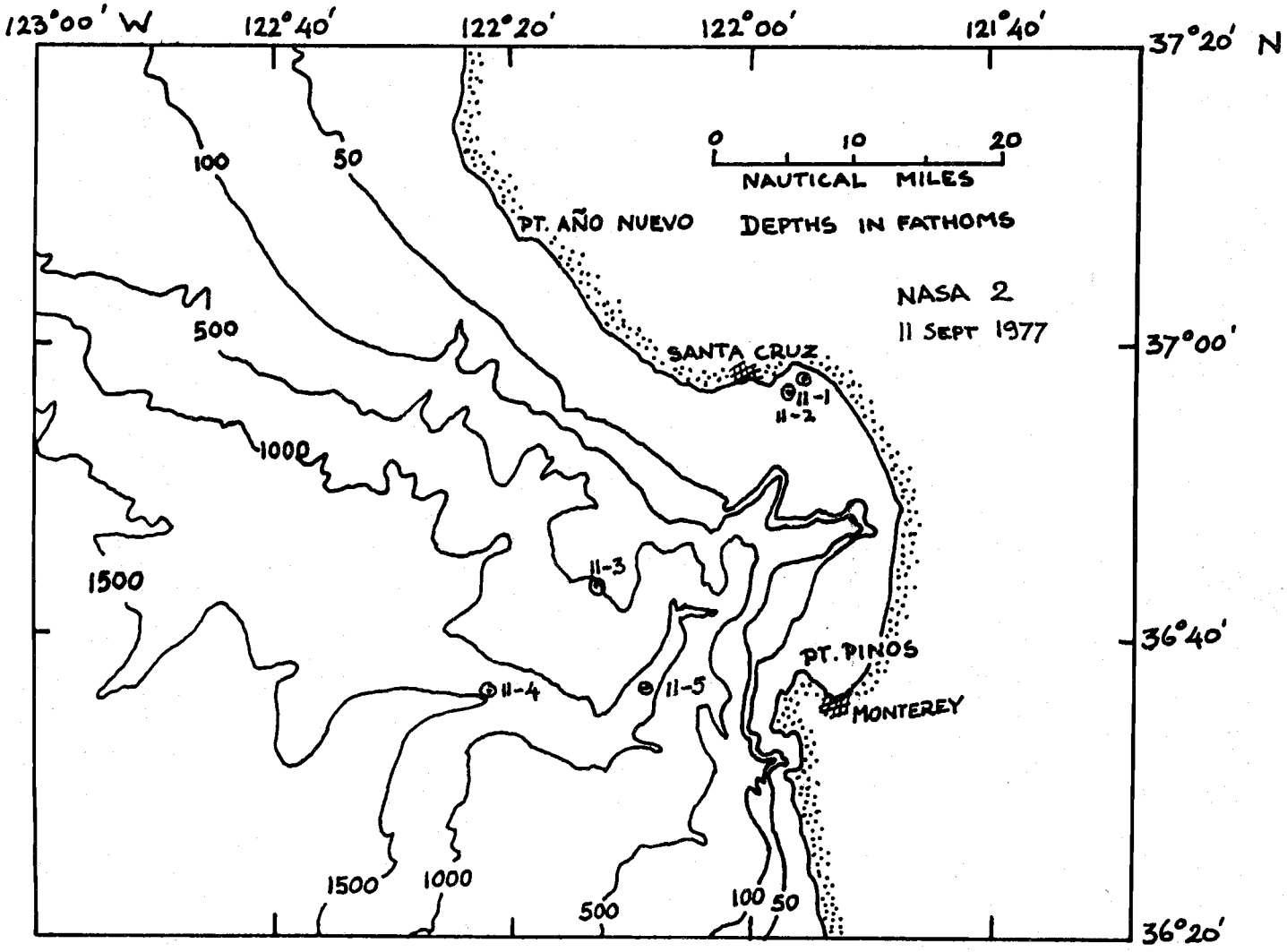

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
12-10
12-9
12-11
12-8
13-1
12-7
12-2
12-6
RED SAND HILL
13-2
12-5
12-4
12-3
13-3
50 FM.
12-1
100 FM.
50'
MOSS LANDING
SALINAS R.
40'
100 FM.
50 FM.
13-4
NASA 1
12,13 May 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'

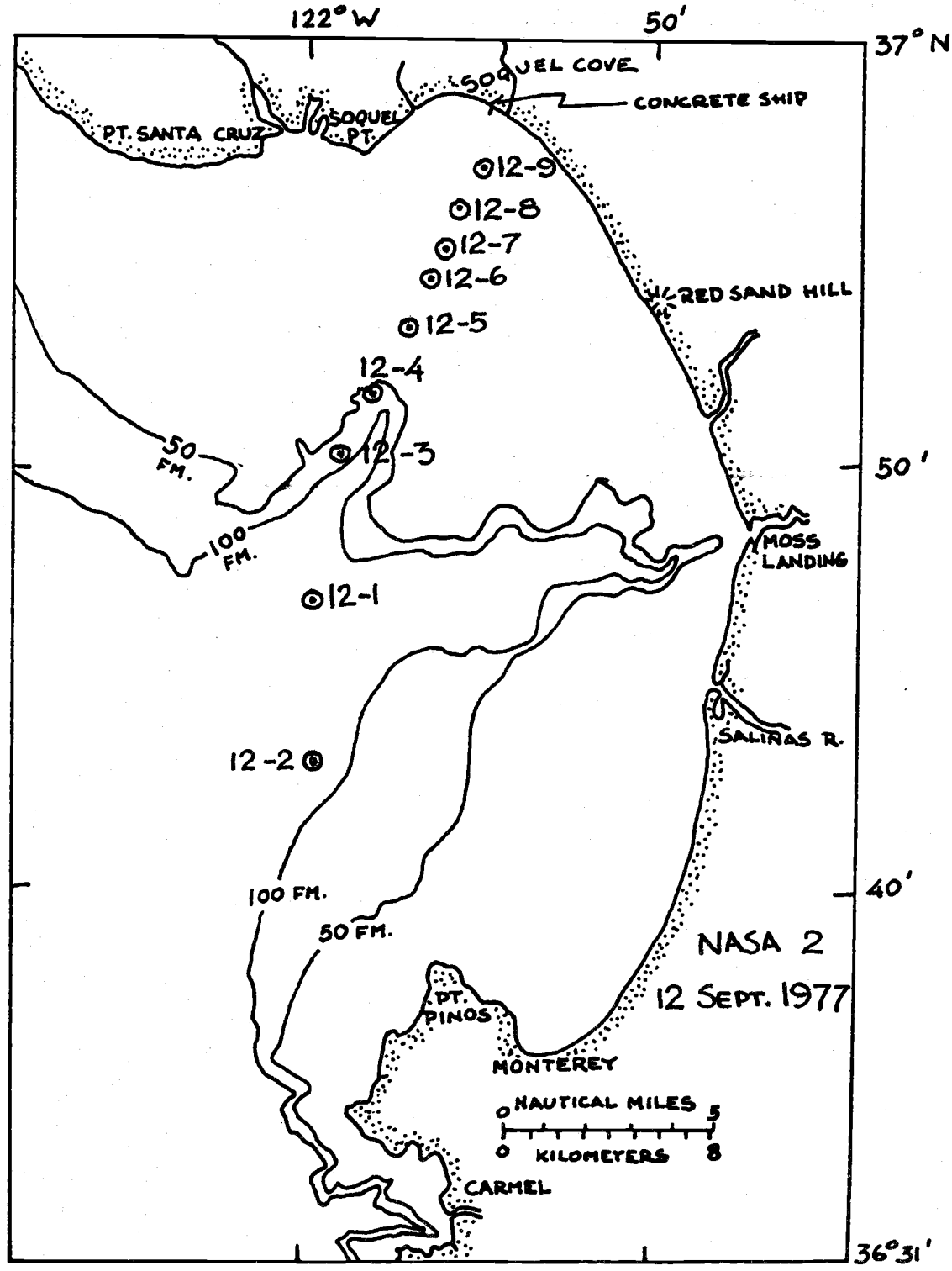

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
7-1
7-2
7-3
7-4
RED SAND HILL
50 FM.
100 FM.
50'
MOSS LANDING
6-5
6-4
SALINAS R.
6-3
100 FM.
6-2
50 FM.
40'
NASA 2
6,7 SEPT. 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
KILOMETERS
CARMEL
36°31'

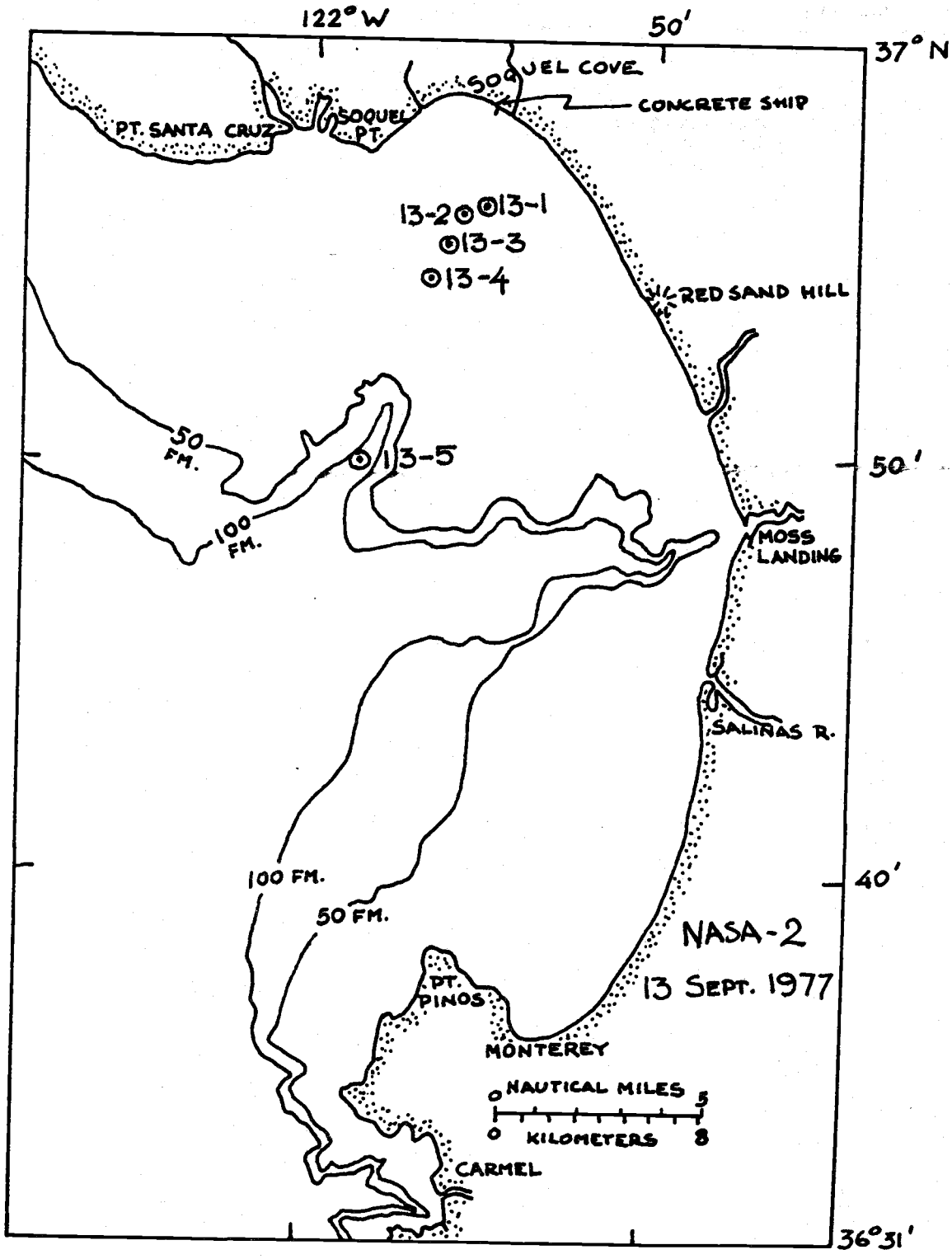

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
RED SAND HILL
8-1
8-2
8-3
8-4
8-5
8-6
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
40'
100 FM.
50 FM.
NASA 2
8 SEPT. 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
0
5
KILOMETERS
0
8
CARMEL
36°31'

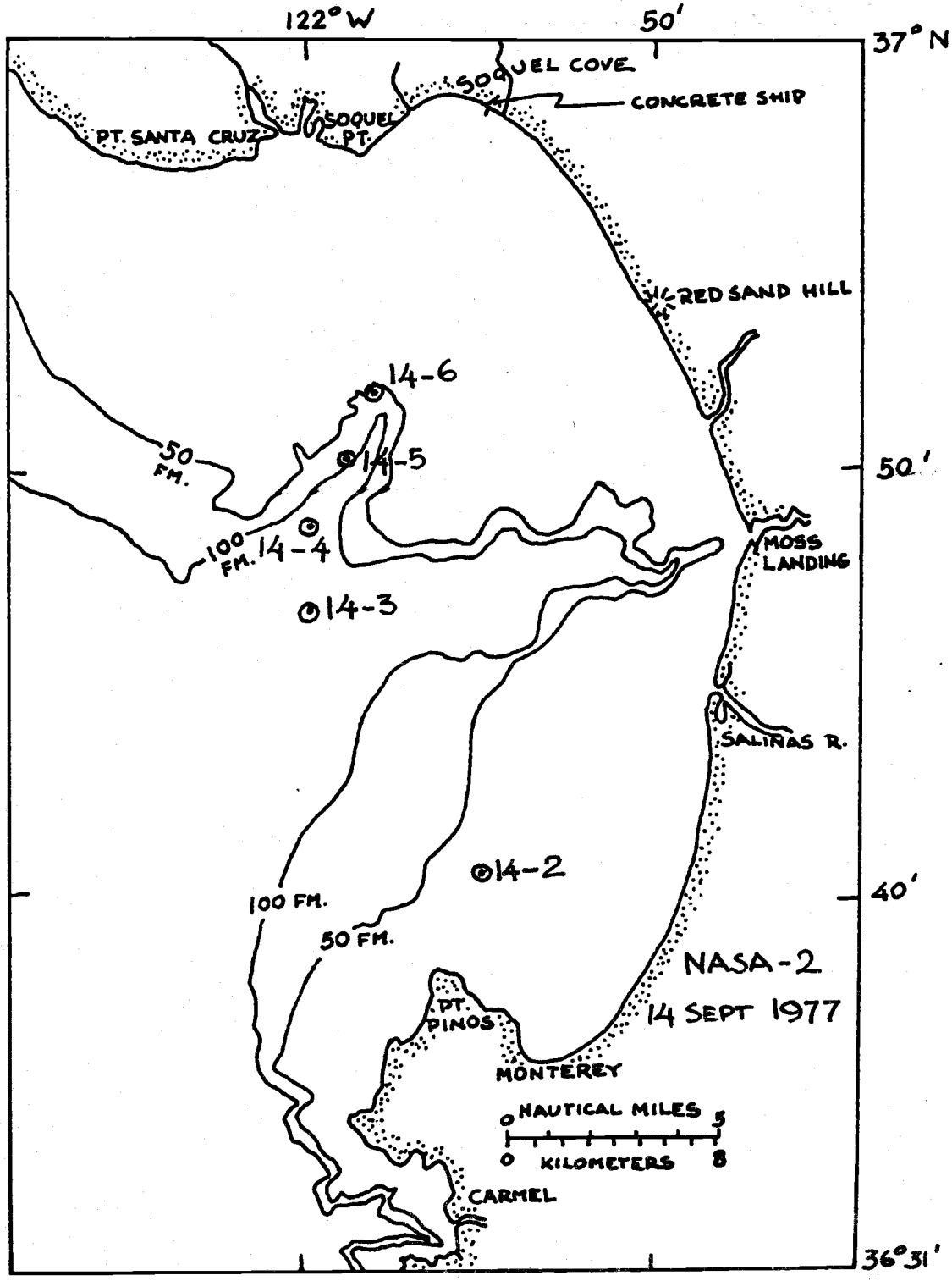

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
9-9
9-8
9-7
9-6
RED SAND HILL
9-5
9-4
50 FM.
9-3
50'
100 FM.
9-2
MOSS LANDING
9-1
SALINAS R.
100 FM.
50 FM.
40'
NASA 2
9 SEPT. 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
KILOMETERS
CARMEL
36°31'

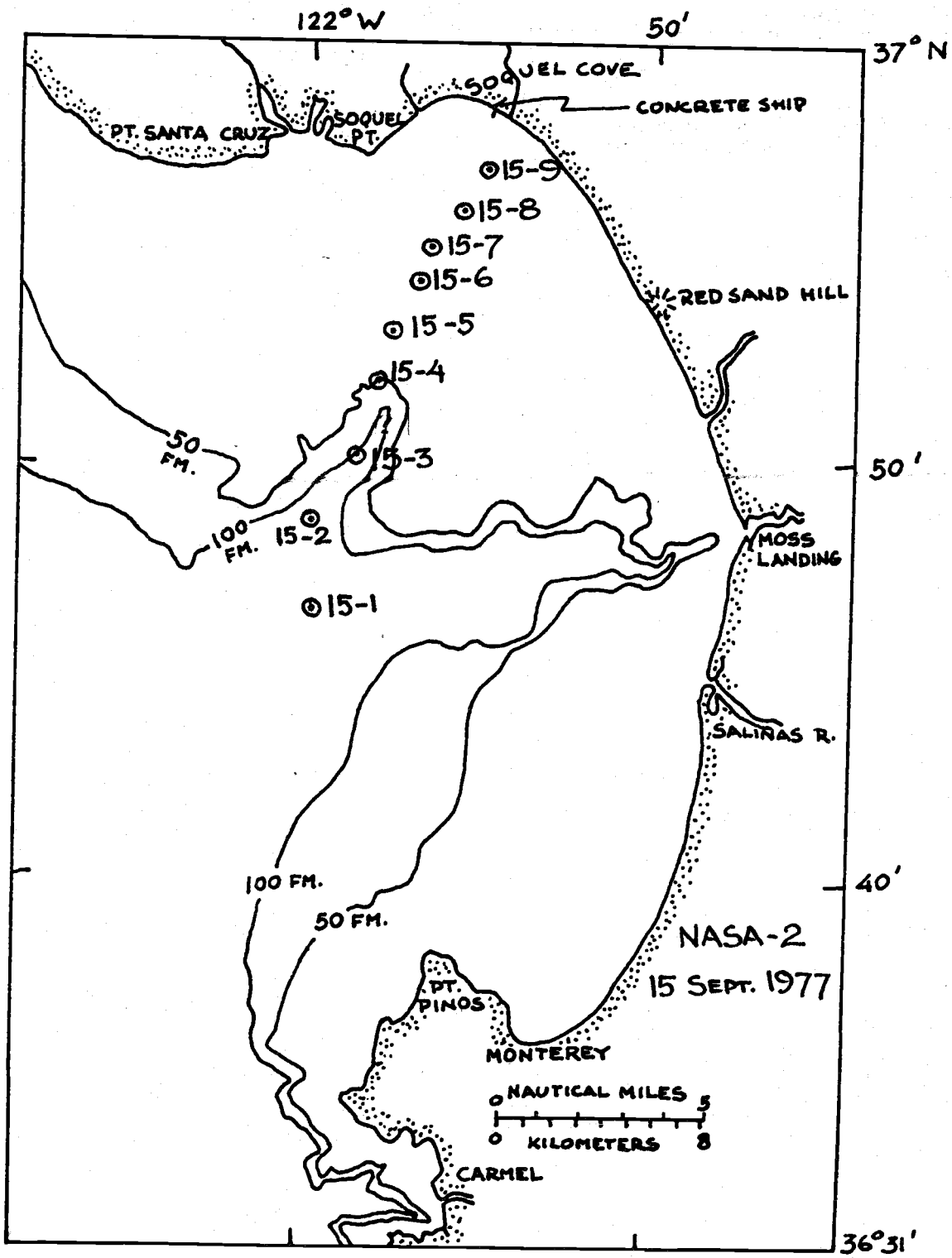

122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
10-1
10-18
10-2
10-17
10-3
10-16
10-4
RED SAND HILL
10-15
10-5
10-13
10-12
10-6
10-11
10-14
10-10
50 FM.
10-7
10-9
10-8
100 FM.
MOSS LANDING
50'
SALINAS R.
40'
100 FM.
50 FM.
NASA 2
PT. PINOS
10 SEPT. 1977
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'

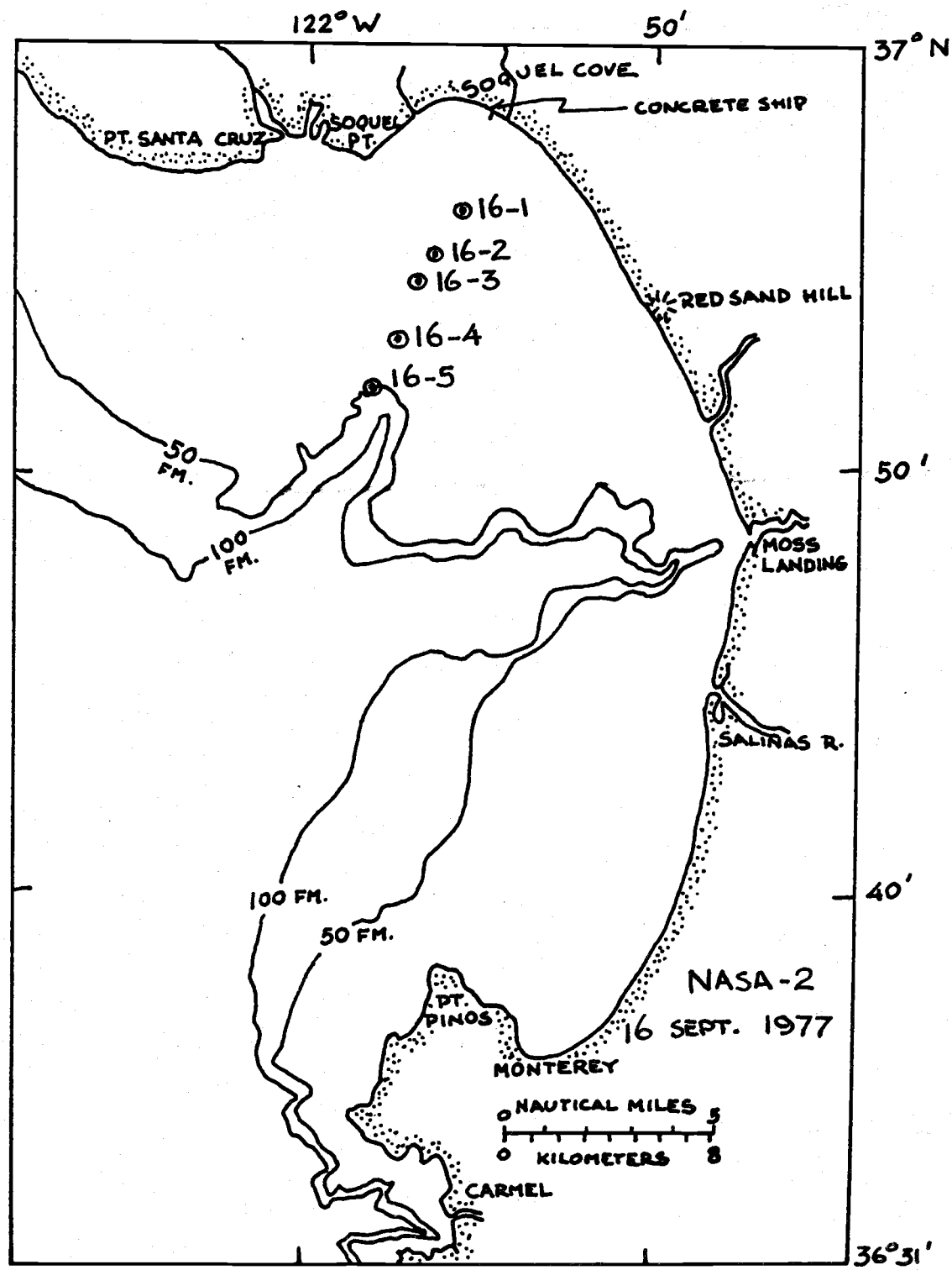

123°00' W
122°40'
122°20'
122°00'
121°40'
37°20' N
37°00'
36°40'
36°20'
0 10 20
NAUTICAL MILES
DEPTHS IN FATHOMS
NASA 2
11 SEPT 1977
PT. AÑO NUEVO
SANTA CRUZ
PT. PINOS
MONTEREY
11-1
11-2
11-3
11-4
11-5
100
50
500
1000
1500


122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
12-9
12-8
12-7
12-6
12-5
12-4
12-3
12-1
12-2
RED SAND HILL
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
40'
100 FM.
50 FM.
NASA 2
12 SEPT. 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'


122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
13-2
13-1
13-3
13-4
RED SAND HILL
50 FM.
13-5
100 FM.
50'
MOSS LANDING
SALINAS R.
100 FM.
50 FM.
40'
NASA-2
13 SEPT. 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
KILOMETERS
CARMEL
36°31'


122° W
50'
37° N
50'
40'
36°31'
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
RED SAND HILL
14-6
14-5
14-4
14-3
14-2
50 FM.
100 FM.
MOSS LANDING
SALINAS R.
100 FM.
50 FM.
NASA-2
14 SEPT 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
0
5
KILOMETERS
0
8
CARMEL


122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
15-9
15-8
15-7
15-6
RED SAND HILL
15-5
15-4
50 FM.
15-3
50'
100 FM.
15-2
MOSS LANDING
15-1
SALINAS R.
100 FM.
50 FM.
40'
NASA-2
15 SEPT. 1977
PT. PINOS
MONTEREY
NAUTICAL MILES
0
5
KILOMETERS
0
8
CARMEL
36°31'


122° W
50'
37° N
SOQUEL COVE
CONCRETE SHIP
PT. SANTA CRUZ
SOQUEL PT.
16-1
16-2
16-3
16-4
16-5
RED SAND HILL
50 FM.
100 FM.
50'
MOSS LANDING
SALINAS R.
40'
100 FM.
50 FM.
NASA-2
16 SEPT. 1977
PT. PINOS
MONTEREY
0 NAUTICAL MILES 5
0 KILOMETERS 8
CARMEL
36°31'

# SUMMARY OF DATA

TABLE I. Summary of data taken on the NASA 1 and NASA 2 cruises. The first number of the station designations indicate date during May ,1977 for NASA 1 and date in September 1977 for NASA 2

| | NASA 1 Stations | Page # | NASA 2 Stations | Page # |
|---|---|---|---|---|
| Station Location | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 5-12 | 6.2-6.5;7.2-7.4;8.1-8.6; 9.1-9.9;10.1-10.18; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2-14.6; 15.1-15.9;16.1-16.5 | 13-22 |
| Secchi Depth | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7;1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 6.2-6.5;7.2-7.4;8.1-8.6; 9.1-9.9;10.1-10.18; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2-14.6; 15.1-15.9;16.1-16.5 | 57-88 |
| Munsell Color | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 6.2-6.5;7.2-7.4;8.1-8.6; 9.1-9.9;10.1-10.18; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2-14.6; 15.1-15.6;15.8-15.9; 16.1-16.5 | 57-88 |
| Forel Color | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 6.2-6.5;7.2-7.4;8.1-8.6; 9.1-9.9;10.1-10.18; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2-14.6; 15.1-15.9;16.1-16.5 | 57-88 |
| Temperature | | | 6.5;7.2;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.5 | 58-88 |
| Salinity | See NPS Report | | 6.5;7.2;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.5 | 58-88 |
| Sigma-t | | | 6.5;7.2;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; | 58-88 |
| C | 3.1-3.8;4.1-4.6;5.1-5.7; 6.1-6.3;6.5-6.11;7.1; 9.1-9.2;9.4-9.6; 10.1-10.10;11.1-11.6; 12.1-12.11;13.1-13.4 | 33-57 | 7.2-7.4;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.6; 15.1-15.9;16.1-16.5 | 59-88 |
| C/N | 3.1-3.8;4.1-4.6;5.1-5.7; 6.1-6.3;6.5-6.11;7.1; 9.1-9.2;9.4-9.6; 10.1-10.10;11.1-11.6; 12.1-12.11;13.1-13.4 | 33-57 | 7.2;7.4;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.6; 15.1-15.9;16.1-16.5 | 59-88 |
| Spectral beam transmission | 3.1-3.8;4.1-4.6;5.1-5.7; 6.1-6.11;7.1;9.1-9.6; 10.1-10.10;11.1-11.6; 12.1-12.11;13.1-13.4 | 164-170 | 6.1-6.5;7.1-7.2;8.1-8.6; 9.1-9.9;10.1-10.18; 11.1-11.5;12.1-12.9; 13.1-13.6;14.1-14.6; 15.1-15.8;16.1-16.7 | 171-216 |
| Particle size distribution | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 93-100 | 7.1-7.4;8.1-8.5;11.1-11.4; 12.1-12.4;12.6-12.9; 13.1-13.6;14.2-14.4;15.9; 16.1-16.7 | 102-109 |
| Spectral light scattering at 45, 90, and 135 degrees | 3.1-3.8;4.1-4.6;5.1-5.7; 6.1-6.11;7.1;9.1-9.6; 10.1-10.10;11.1-11.6; 12.1-12.11;13.1-13.4 | | 6.5;7.1-7.4;8.1-8.6; 9.1-9.9;11.1-11.5; 12.1-12.9;13.1-13.6; 14.2-14.6;15.1-15.9; 16.1-16.8 | 129-136 |
| Narrow angle light scattering | None | | 6.5;7.1-7.4;8.1-8.6; 9.1-9.7;11.1-11.4; 12.1-12.8;13.1-13.6; 14.2-14.6;15.1-15.9 | 141-158 |

| | NASA 1 Stations | Page # | NASA 2 Stations | Page # |
|---|---|---|---|---|
| $NH_3$ | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 6.5;7.2-7.4;8.1-8.6; 9.2-9.3;9.5-9.9;11.1-11.5; 12.1-12.9;13.1-13.6;14.2; 14.4-14.6;15.1-15.9; 16.4-16.5 | 57-88 |
| $NO_3$ - $NO_2$ | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.9;6.11; 7.1;9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 6.5;7.2-7.4;8.1-8.16; 9.2-9.3;9.5-9.9;11.1-11.5; 12.1-12.9;13.1-13.6;14.2; 14.4-14.6;15.1-15.9; 16.4-16.5 | 57-88 |
| $S_iO_4$ | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 7.2-7.3;8.6;9.2-9.3; 9.8-9.9;11.1-11.5; 12.3-12.9;13.1-13.6;14.2 14.4-14.6;15.1;15.3-15.9; 16.3-16.5 | 58-88 |
| $PO_4$ | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 6.5;7.2-7.4;8.1-8.3; 8.5-8.6;9.2-9.3;9.5-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.6; 15.2;15.4;16.4-16.5 | 57-88 |
| Chlorophyll a | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1; 9.1-9.6;10.1-10.10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 7.2-7.4;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.6; 15.1-15.9;16.1-16.5 | 58-88 |
| Phe. Phy. a | 2.1;3.1-3.8;4.1-4.6; 5.1-5.7;6.1-6.11;7.1 9.1-9.6;10.1-10;10; 11.1-11.6;12.1-12.11; 13.1-13.4 | 33-57 | 7.2-7.4;8.1-8.6;9.1-9.9; 11.1-11.5;12.1-12.9; 13.1-13.6;14.2;14.4-14.6; 15.1-15.9;16.1-16.5 | 58-88 |
| Spectral irradiance | See NPS Report | | See NPS Report | |
| Phytoplankton species and concentration | See NPS Report | | See NPS Report | |

# HYDROGRAPHIC AND CHEMICAL DATA

## CONDUCTIVITY AND TEMPERATURE

Temperature and depth measurements on the NASA2 cruise were obtained with a CTD designed and built by the OSU optics group. Analog values proportional to T, D, and conductivity are input to a data logging package which records digitized data on cassette tapes. Sampling rate was one scan per 2 seconds. Depth measurements used a temperature compensated 150 psia potentiometric transducer giving a range of 0-90 M with a resolution of 2.5 cm. The temperature probe was calibrated for a range of -1 to 28°C and resolution of 0.01°C. The conductivity sensor is temperature compensated, has a range of 0 to 65 μmho with a resolution of 0.02 μmho. Overall system error is estimated to be within 0.1 M depth, 0.04°C and 0.07 o/oo salinity.

## CHLOROPHYLL

Particulate chlorophyll values were obtained by the filtration of one liter of seawater through a 0.45μ membrane filter and freezing the filters for laboratory analysis. The trichlorometric chlorophyll and phaeophytin acidification methods given in Strickland and Parsons (1968) were used with the SCOR-UNESCO equations. The chlorophyll and phaeophytin a values reported are derived from the acidification method except when this yielded erroneous results (about 20% of samples) in which case the trichlorometric value for chl a in reported with no phae a value. Analyst error resulted in the need to reject 24% of the NASA1 samples.

Strickland, J. D. H. and T. R. Parsons. 1968. A practical handbook of seawater analysis. Fisheries Research Board of Canada. 311 pp.

## CARBON AND NITROGEN

Particulate carbon and nitrogen measurements were made by filtering up to 500 ml of water through an 11 mm diameter glass-fibre filter. The filters are frozen on the ship, oven dried in the laboratory, folded and stuffed into silver capsules, and analyzed by combustion-gas chromatography using a Carlo Erba model 1100 CHN elemental analyzer. The method and description of equipment is given in Pella and Columbo, 1973. Overall resolution error estimate is .5 μg N/ℓ and 1 μg C/ℓ at the levels found in the NASA samples. The carbon to nitrogen ratio (C/N) provides an index of the "food quality" of the small particulate material. In laboratory phytoplankton cultures, C/N ratios of 5 to 7 indicate nutrient sufficient actively growing cells, values of 8-11 indicate nutrient limited scenescent cells, and of above 12 indicate dead or dying cells. In field samples from near-shore areas the addition of nonphytoplankton detritus (having a high C/N ratio) tends to mask the phytoplankton "quality" but does represent an integrated value for all of the material available for consumption by filter feeding herbivours.

Pella E. and B. Columbo, 1973. Study of Carbon, Hydrogen and Nitrogen Determination by Combustion - Gas Chromatography. Mikrochim Acta, 1973/5, 697-719.

## NUTRIENTS

Seawater was sampled from Niskin Van Dorn bottles generally in duplicate. Due to the high biomass, seawater was aspirated through 10μ mesh Pecap[R] screen before introduction into the Autoanalyzer. The Pecap screen was formed into a bag affixed to a syringe and the sample was drawn from the sample bottle with as little suction as possible in an attempt to minimize cell breakage. Comparisons of filtered and unfiltered water indicated that ammonia was overestimate in the filtered samples due to cell breakage and/or loss of cellular contents. The differential was especially significant in Rich biomass samples and at times was high as 25%. Phosphate values were also slightly distorted by this filtration process and at times were overestimated by about 10%. Nitrate and silicate values were comparible in both filtered and unfiltered water. Filtration was necessary in order to perform nitrate (particulates tended to plug the cadmium column and phosphate (particulates tends to introduce "noise" into analysis) determinations.

The methodologies for phosphate and silicate are detailed in Calloway, et al. (1972) and were not modified for the NASA cruises. The nitrate-nitrite methodology also was taken from Calloway et al. (1972) with the following modifications:

1. Sample tube 0.8 cc/min.
2. Diluter tube 1.2 cc/min.
3. First bubble is pumped from the system rather than gravity ejected. A 1.0 cc/min. tube was used for this debubbling process.

The ammonia methodology used was that published in Head (1971).

Mixed standards were prepared in artificial seawater each morning. Variation in analytical sensitivity was generally attributed to fluctuating

ambient air temperature aboard the R/V Acania. Since the autoanalysis chemical manifolds were not thermally insulated, the reaction temperatures fluctuated with the lab temperature.

Callaway, J. C., R. D. Tomlinson, L. I. Gordon, L. Barstow, P. K. Park. 1972. An Instruction Manual for Use of the Technicon Autoanalyzer II for Precision Seawater Analysis, August 1972. Oregon State University Technical Report, Revision 1. School of Oceanography, Corvallis, Oregon 97331.

Head, P. C. 1971. An Automated Phenolhypochlorite Method for the Determinations of Ammonia in Seawater. Deep-Sea Res. 8:531-532.

Cruise NASA 1
Vessel R/V ACANIA
Date 5/2/77
Time 1400-1420
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 2-1
Latitude 36° 40.03'N
Longitude 121 °54.89'W
Secchi Depth 7.5 m
Sonic Depth
Weather

Wind Speed 8 k
Wind Direct. (True) 310°
Air Temp (Dry Bulb)
Air Temp (Wet Bulb)
Surface Bucket Temp (°C) 12.5
Visibility

Clouds, Type
Cloud Cover (%)
Swell Direction
Height
Length
Comments ~~2 miles off~~ Montery Pier

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | | 16.0 | 24.1 | 1.52 | 0.98 | 0.74 | | | | |
| 5 | | | | | 15.8 | 24.3 | 1.50 | 1.20 | 0.25 | | | | |
| 10 | | | | | 16.8 | 24.8 | 1.58 | | | | | | |
| 20 | | | | | 18.4 | 25.7 | 1.76 | 1.26 | 0.26 | | | | |
| 30 | | | | | 18.9 | 25.8 | 1.70 | 1.02 | 1.63 | | | | |
| 50 | | | | | 20.4 | 25.7 | 1.80 | 2.68 | 0.26 | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time
Water color (Forel) 5
(Munsell) 5BG 5/6

Station No. 3-1
Latitude 36°53.78'N
Longitude 121° 56.63'W
Secchi Depth 9 m
Sonic Depth
Weather

Wind Speed 0 k
Wind Direct. (True) 0°
Air Temp (Dry Bulb) 12.5°C
Air Temp (Wet Bulb) 11.39°C
Surface Bucket Temp (°C) 12
Visibility

Clouds, Type
Cloud Cover (%)
Swell Direction NW
Height 1
Length 100
Comments 5 miles S Soquel ~~at head Monterey Canyon~~

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.51 | 11.7 | | | 1.88 | | 152.8 | 18.8 | 8.15 | |
| sfc | | | | 0.64 | 11.8 | | | | | | | | |
| 5 | | | | 0.52 | 12.1 | | | 1.83 | 0.35 | 148.9 | 20.2 | 7.38 | |
| 5 | | | | 0.53 | 12.0 | | | | | | | | |
| 10 | | | | 0.53 | 11.6 | | | 1.85 | | 130.0 | 18.3 | 7.12 | |
| 10 | | | | | | | | | | | | | |
| 20 | | | | filtered 3.41 | 16.3 | 23.9 | 1.63 | 1.43 | | 203.2 | 33.8 | 6.01 | |
| 20 | | | | unfiltered 0.56 | | 18.8 | 1.48 | | | | | | |
| 20 | | | | unfiltered 0.57 | | 18.7 | 1.51 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 900-920
Water color (Forel) 8
(Munsell) 10GY 7/6

Station No. 3-2
Latitude 36° 55.06' N
Longitude 121° 56.50' W
Secchi Depth 4 m
Sonic Depth
Weather

Wind Speed 0 k
Wind Direct. (True) 0°
Air Temp (Dry Bulb) 11.67°C
Air Temp (Wet Bulb) 10.67°C
Surface Bucket Temp (°C) 13.5
Visibility 15 miles

Clouds, Type overcast
Cloud Cover (%) 7[illegible]
Swell Direction NW
Height 1
Length 100
Comment 6 miles SE Soquel Cove Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 3.13 | 7.79 | 19.0 | 0.97 | | | 354.4 | 72.9 | 4.86 | |
| 5 | | | | 1.33 | 10.9 | 21.0 | 1.27 | | | 257.5 | 49.3 | 5.22 | |
| 10 | | | | 1.19 | 11.8 | 21.6 | 1.39 | 2.38 | | 136.7 | 19.6 | 6.97 | |
| 15 | | | | | | | | 1.21 | | 105.2 | 15.2 | 6.91 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 1000-1020
Water color
(Forel) 9
(Munsell) 10GY 7/6

Station No. 3-3
Latitude 36° 56.33' N
Longitude 121° 56.34' W
Secchi Depth 4 m
Sonic Depth 18.3 m
Weather

Wind Speed 3-4 k
Wind Direct. (True) 135°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 13.8
Visibility 15+

Clouds, Type cumul/strat
Cloud Cover (%) 90
Swell Direction NW
Height 1
Length 100
Comments 4 miles SE Soquel Cove Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.41 | 4.30 | 15.9 | 0.82 | | | 423.1 | 74.8 | 5.66 | |
| 5 | | | | 1.21 | 7.23 | 18.4 | 1.08 | 1.94 | 0.80 | 174.6 | 28.6 | 6.11 | |
| 10 | | | | 1.04 | 9.08 | 21.6 | 1.61 | 1.98 | 0.16 | 350.3 | 60.0 | 5.84 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 1045-1105
Water color
(Forel) 10
(Munsell) 10GY 7/6

Station No. 3-4
Latitude 36° 57.52' N
Longitude 121° 56.13' W
Secchi Depth 3.5 m
Sonic Depth 7.6 m
Weather

Wind Speed 0 k
Wind Direct. (True) 0°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 14
Visibility 15+

Clouds, Type cum/strat
Cloud Cover (%)
Swell Direction NW
Height 1
Length 100
Comments 1 1/2 miles off Soquel Cove Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.29 | 1.60 | 9.30 | 0.56 | 3.57 | 1.28 | 471.0 | 79.1 | 5.96 | |
| 5 | | | | 0.50 | 2.94 | 10.9 | 0.65 | 2.17 | 1.72 | 452.8 | 85.2 | 5.31 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 1310 - 1400
Water color
(Forel) 10
(Munsell) 10GY 7/6

Station No. 3-5
Latitude 36°57.50' N
Longitude 121°56.30' W
Secchi Depth 3 m
Sonic Depth 9.1 m
Weather

Wind Speed 10-12 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 13.61°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 13.9
Visibility 15+

Clouds, Type cum/strat
Cloud Cover (%) 80
Swell Direction N
Height 2
Length 60
Comments 2 miles off Soquel Cove Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .51 | 4.28 | 14.4 | .74 | 6.54 | 3.34 | 331.9 | 60.3 | 6.33 | |
| 5 | | | | .38 | 4.09 | 13.9 | .69 | | | 441.8 | 76.8 | 5.76 | |
| 8 | | | | 1.03 | 6.66 | 14.5 | .97 | 2.73 | 0.94 | 340.9 | 59.7 | 5.71 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 1525-1600
Water color (Forel) 8
(Munsell) 10G 7/6

Station No. 3-6
Latitude 36°56.39' N
Longitude 121°56.75' W
Secchi Depth 5 m
Sonic Depth 17.1 m
Weather

Wind Speed 12 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 13.33°C
Air Temp (Wet Bulb) 11.94°C
Surface Bucket Temp (°C) 12.6
Visibility 15+

Clouds, Type cum
Cloud Cover (%) 100
Swell Direction NW
Height 12
Length 75
Comments 1 mile off Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .72 | 7.82 | 18.2 | 1.01 | 2.43 | 0.48 | 372.8 | 62.8 | 5.93 | |
| 3 | | | | .48 | 7.65 | 18.0 | .99 | | | 403.9 | 63.8 | 6.33 | |
| 8 | | | | .54 | 7.58 | 17.1 | .99 | | | 533.4 | 64.3 | 8.30 | |
| 13 | | | | 1.58 | 11.21 | 21.7 | 1.43 | 1.32 | 1.43 | 179.6 | 27.8 | 6.45 | |
| 16 | | | | 1.52 | 14.11 | 23.0 | 1.54 | | | 195.3 | 31.0 | 6.30 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 1635-1655
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 3-7
Latitude 36°54.86' N
Longitude 121°56.98' W
Secchi Depth 6 m
Sonic Depth
Weather

Wind Speed 10-12 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 11.39°C
Surface Bucket Temp (°C) 12.4
Visibility

Clouds, Type cum
Cloud Cover (%) 75
Swell Direction NW
Height 1-2
Length 75
Comments 3 miles off Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .71 | 10.6 | 17.8 | 1.22 | | | 103.3 | 15.2 | 6.81 | |
| 5 | | | | .58 | 10.6 | 17.7 | 1.20 | | | 135.0 | 21.4 | 6.31 | |
| 10 | | | | .79 | 11.1 | 18.5 | 1.21 | 1.94 | 2.67 | 159.0 | 16.2 | 9.82 | |
| 20 | | | | 1.27 | 14.3 | 21.5 | 1.43 | 1.33 | 0.79 | 115.8 | 17.5 | 6.63 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/3/77
Time 1700-1710
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 3-8
Latitude 36°53.50' N
Longitude 121°57.03' W
Secchi Depth 8 m
Sonic Depth 29.3 m
Weather

Wind Speed 12 k
Wind Direct. (True) 290°
Air Temp (Dry Bulb) 13.89°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 12.6
Visibility 15+

Clouds, Type cum/strat
Cloud Cover (%) 80
Swell Direction NW
Height 12
Length 60
Comments S 4 miles off Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | | 11.0 | 19.4 | 1.24 | 0.72 | 1.71 | 133.9 | 20.3 | 6.59 | |
| 5 | | | | .41 | 10.5 | 18.2 | 1.22 | | | 135.3 | 23.7 | 5.72 | |
| 10 | | | | .90 | 10.2 | 18.7 | 1.27 | | | 160.6 | 31.5 | 5.10 | |
| 15 | | | | .83 | 12.2 | 19.4 | 1.31 | 1.66 | 0.57 | 145.6 | 26.1 | 5.58 | |
| 25 | | | | 1.46 | 16.0 | 23.2 | 1.62 | 1.10 | 0.33 | 102.7 | 20.9 | 4.91 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/4/77
Time 840-850
Water color (Forel) 8
(Munsell) 10G 7/6

Station No. 4-1
Latitude 36°56.33' N
Longitude 121°56.51' W
Secchi Depth 5 m
Sonic Depth 17.4 m
Weather

Wind Speed 2-3 k
Wind Direct. (True) 120°
Air Temp (Dry Bulb) 10.56°C
Air Temp (Wet Bulb) 7.78°C
Surface Bucket Temp (°C) 12.4
Visibility 15+

Clouds, Type
Cloud Cover (%)
Swell Direction W
Height 2-3
Length 50
Comments 2 miles off Soquel Pt. - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .70 | 7.64 | 16.8 | .95 | 2.03 | 0.61 | 190.2 | 37.8 | 5.03 | |
| 5 | | | | .44 | 7.96 | 16.9 | .91 | | | 260.3 | 55.5 | 4.70 | |
| 10 | | | | .94 | 11.2 | 18.5 | 1.16 | 1.60 | 0.72 | 162.3 | 34.3 | 4.74 | |
| 15 | | | | 1.85 | 14.3 | 24.3 | 1.53 | | | 118.6 | 24.1 | 4.93 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/4/77
Time 955-1003
Water color (Forel) 11
(Munsell) 5GY 7/6

Station No. 4-2
Latitude 36°57.57' N
Longitude 121°54.58' W
Secchi Depth 3 m
Sonic Depth 8 m
Weather

Wind Speed 3-4 k
Wind Direct. (True) 180°
Air Temp (Dry Bulb) 10.56°C
Air Temp (Wet Bulb) 8.33°C
Surface Bucket Temp (°C) 13.0
Visibility 15+

Clouds, Type clear haze
Cloud Cover (%)
Swell Direction SW
Height 1
Length 60
Comments 1 mile off Soquel Cove Beach - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .37 | 4.21 | 21.6 | .64 | | | 463.2 | 95.4 | 4.86 | |
| 4 | | | | .86 | 4.34 | 21.5 | .70 | 2.40 | 1.47 | 485.7 | 101. | 4.81 | |
| 7 | | | | .91 | 9.97 | 19.4 | 1.09 | | | 237.3 | 49.4 | 4.81 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/4/77
Time 1040-1050
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 4-3
Latitude 36°56.79' N
Longitude 121°55.93' W
Secchi Depth 5 m
Sonic Depth 17 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 230°
Air Temp (Dry Bulb) 11.20°C
Air Temp (Wet Bulb) 8.61°C
Surface Bucket Temp (°C) 12.8
Visibility 15+

Clouds, Type clear
Cloud Cover (%)
Swell Direction SW
Height 2
Length 60
Comments 1 mile off Soque Point - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .35 | 7.10 | 16.7 | .85 | | | 328.2 | 58.9 | 5.57 | |
| 5 | | | | .55 | 8.01 | 17.7 | .90 | 4.96 | 0.73 | 308.2 | 63.0 | 4.98 | |
| 10 | | | | .55 | 10.6 | 19.3 | 1.10 | 5.91 | 1.96 | 195.2 | 31.8 | 6.14 | |
| 15 | | | | 1.65 | 13.5 | 23.0 | 1.43 | 2.40 | 0.01 | 166.2 | 31.8 | 5.23 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/4/77
Time 1410-1420
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 4-4
Latitude 36°56.35' N
Longitude 121°54.87' W
Secchi Depth 3 m
Sonic Depth 15.8 m
Weather

Wind Speed 8-9 k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 13.60°C
Air Temp (Wet Bulb) 11.39°C
Surface Bucket Temp (°C) 13.6
Visibility 15+

Clouds, Type clear, slig. haze
Cloud Cover (%)
Swell Direction NW
Height 4-5
Length 40
Comments 2 miles off Soque Cove Beach - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .46 | 4.90 | 15.9 | .84 | | | 149.8 | 29.2 | 5.13 | |
| 2 | | | | .79 | 4.70 | 15.6 | .83 | 1.48 | 0.54 | 451.3 | 80.7 | 5.59 | |
| 8 | | | | .50 | 6.79 | 16.2 | .89 | | | 376.7 | 66.3 | 5.69 | |
| 13 | | | | .99 | 9.14 | 18.0 | 1.08 | 2.54 | 1.48 | 226.3 | 47.7 | 4.75 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/4/77
Time 1450-1458
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 4-5
Latitude 36°57.03' N
Longitude 121°53.95' W
Secchi Depth 3.5 m
Sonic Depth 9.1 m
Weather

Wind Speed 8 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 14.17°C
Air Temp (Wet Bulb) 11.39°C
Surface Bucket Temp (°C) 13.2
Visibility 15+

Clouds, Type Hazy clear
Cloud Cover (%)
Swell Direction NW
Height 3-4
Length 40
Comments 2 miles off Soquel Cove Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .50 | 5.39 | 16.4 | .61 | | | 413.4 | 73.2 | 5.65 | |
| 5 | | | | .36 | 4.82 | 16.2 | .58 | 2.06 | 3.95 | | | | |
| 8 | | | | .64 | 4.71 | 15.8 | .60 | | | 552.6 | 94.3 | 5.86 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/4/77
Time 1600-1609
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 4-6
Latitude 36°57.64' N
Longitude 121°55.91' W
Secchi Depth 3.5 m
Sonic Depth 9.1 m
Weather

Wind Speed 14-16 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 11.39°C
Surface Bucket Temp (°C) 13.3
Visibility 15+

Clouds, Type Haze
Cloud Cover (%)
Swell Direction NW
Height 1-2
Length 40
Comments Off Soquel Cove Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .44 | 6.35 | 17.3 | .87 | | | 532.6 | 78.7 | 6.77 | |
| 5 | | | | .84 | 6.50 | 17.7 | .88 | 1.79 | 0.16 | 916.8 | 70.7 | 12.97 | |
| 8 | | | | .55 | 8.74 | 18.4 | 1.02 | 3.26 | | 730.1 | 68.6 | 10.64 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 830-841
Water color
(Forel) 5
(Munsell) 5BG 7/6

Station No. 5-1
Latitude 36°49.37' N
Longitude 121°58.77' W
Secchi Depth 15 m
Sonic Depth 90 m
Weather

Wind Speed 8-9 k
Wind Direct. (True) 310°
Air Temp (Dry Bulb) 10.28°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 11.8
Visibility 12

Clouds, Type stratus
Cloud Cover (%) 80
Swell Direction NW
Height 4-6
Length 100
Comments Monterey Canyon above

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.36 | 13.5 | 43.4 | 1.45 | 0.82 | 0.09 | 79.3 | 9.4 | 8.44 | |
| 5 | | | | 1.51 | 13.4 | 43.4 | 1.47 | | | 89.6 | 13.3 | 6.74 | |
| 10 | | | | 1.46 | 13.3 | 43.5 | 1.44 | 0.82 | 20.39 | 80.7 | 9.9 | 8.19 | |
| 20 | | | | | 16.3 | 45.3 | 1.61 | 0.92 | | 61.3 | 9.3 | 6.58 | |
| 40 | | | | 1.85 | 20.1 | 45.2 | 1.76 | | | 170.4 | 8.2 | 20.76 | |
| 80 | | | | 1.27 | 23.4 | 53.5 | 1.95 | | | 94.1 | 4.6 | 16.82 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 955-1116
Water color
(Forel) 5
(Munsell) 5BG 5/6

Station No. 5-2
Latitude 36°51.22' N
Longitude 121°58.14' W
Secchi Depth 8 m
Sonic Depth 90 m
Weather

Wind Speed 14-15 k
Wind Direct. (True) 300°
Air Temp (Dry Bulb) 11.11°C
Air ~~Temp (Wet Bulb)~~ 8.89°C
Surface Bucket Temp (°C) 11.8
Visibility 12

Clouds, Type stratus
Cloud Cover (%) 80
Swell Direction NW
Height 5-8
Length 100
Comments 7 miles SW Santa Cruz over head Monterey Canyon

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .81 | 13.8 | 42.9 | 1.38 | 1.04 | 0.39 | 124.7 | 21.1 | 5.93 | |
| 5 | | | | .84 | 13.7 | 42.9 | 1.37 | 1.13 | 0.12 | 115.0 | 17.7 | 6.51 | |
| 10 | | | | .78 | 13.6 | 43.8 | 1.35 | | | 123.9 | 19.3 | 6.43 | |
| 20 | | | | .85 | 13.7 | 43.8 | 1.35 | | | 170.7 | 28.0 | 6.09 | |
| 40 | | | | 1.59 | 14.2 | 39.1 | 1.46 | 0.97 | | 61.8 | 9.0 | 6.84 | |
| 60 | | | | 1.51 | 24.5 | 64.6 | 2.09 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 1125-1135
Water color
(Forel) 6
(Munsell) 5BG 7/6

Station No. 5-3
Latitude 36°53.07' N
Longitude 121°57.06' W
Secchi Depth 7 m
Sonic Depth 40 m
Weather

Wind Speed 14-16 k
Wind Direct. (True) 290°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 11.6
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 80
Swell Direction NW
Height 4-6
Length 100
Comments 5 miles South Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .46 | 14.6 | 21.1 | 1.44 | | | 141.4 | 21.3 | 6.63 | |
| 5 | | | | .82 | 14.5 | 21.1 | 1.45 | | | 137.3 | 19.5 | 7.04 | |
| 10 | | | | .82 | 14.5 | 21.5 | 1.45 | | | 145.6 | 17.7 | 8.25 | |
| 15 | | | | .80 | 14.6 | 21.8 | 1.45 | 1.41 | | 135.3 | 18.3 | 7.40 | |
| 35 | | | | 1.30 | 18.1 | 24.8 | 1.72 | 1.78 | 2.97 | 138.4 | 15.5 | 8.93 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 1245-1300
Water color (Forel) 9
(Munsell) 10GY 7/6

Station No. 5-4
Latitude 36°54.92'N
Longitude 121°56.43'W
Secchi Depth 5m
Sonic Depth 21.3m
Weather

Wind Speed 16-20 k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 10.28°C
Air Temp (Wet Bulb) 8.61
Surface Bucket Temp (°C) 11.7
Visibility 15+

Clouds, Type Cum
Cloud Cover (%) 40
Swell Direction NW
Height 4-6
Length 100
Comments 3 miles S. Soquel Caños Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .43 | 11.7 | 40.6 | 1.22 | | | 204.1 | 48.3 | 4.23 | |
| 5 | | | | .59 | 11.7 | 39.6 | 1.21 | | | 173.4 | 22.0 | 7.90 | |
| 10 | | | | .64 | 11.7 | 38.2 | 1.25 | | | 272.6 | 35.1 | 7.77 | |
| 15 | | | | .90 | 12.2 | 39.9 | 1.28 | 2.31 | 0.61 | 204.1 | 30.3 | 6.73 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 1338-1355
Water color (Forel) 9
(Munsell) 10GY 7/6

Station No. 5-5
Latitude 36°55.58'N
Longitude 121°56.34'W
Secchi Depth 5.5m
Sonic Depth 19.5m
Weather

Wind Speed 16-20k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 12.0
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 75
Swell Direction NW
Height 4-6
Length 100
Comments 2 miles S. of Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .57 | 7.52 | 33.6 | .95 | | | 452.7 | 84.4 | 5.36 | |
| 5 | | | | .76 | 7.85 | 33.2 | .98 | | | 337.7 | 70.8 | 4.77 | |
| 10 | | | | .71 | 8.40 | 34.6 | .99 | 5.55 | 2.78 | 485.8 | 101. | 4.82 | |
| 18 | | | | 1.86 | 14.4 | 38.1 | 1.55 | 2.06 | 1.44 | 168.7 | 26.9 | 6.27 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 1410-1423
Water color (Forel) 11
(Munsell) 10GY 5/6

Station No. 5-6
Latitude 36°56.93'W
Longitude 121°56.39'W
Secchi Depth 3m
Sonic Depth 14m
Weather

Wind Speed 16-20k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 12.3
Visibility 15+

Clouds, Type cum
Cloud Cover (%) 80
Swell Direction NW
Height 4-6
Length 50
Comments 1 mile off Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .60 | 6.94 | 32.3 | .90 | 6.63 | 4.19 | 459.2 | 73.7 | 6.23 | |
| 5 | | | | .68 | 6.55 | 34.2 | .90 | | | 419.2 | 72.3 | 5.80 | |
| 10 | | | | .83 | 7.50 | 36.0 | .98 | | | 412.0 | 70.9 | 5.81 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/5/77
Time 1450-1503
Water color
(Forel) 11
(Munsell) 10GY 5/6

Station No. 5-7
Latitude 36°57.48'N
Longitude 121°54.59'W
Secchi Depth 2.5m
Sonic Depth 11.6m
Weather

Wind Speed 16-18k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 8.61°C
Surface Bucket Temp (°C) 12.6
Visibility 15+

Clouds, Type Cum
Cloud Cover (%) 80
Swell Direction NW
Height 3-5
Length 50
Comments 1 miles off
Soquel Cove Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.42 | 3.73 | 30.5 | .73 | 4.60 | 2.33 | 528.2 | 93.2 | 5.67 | |
| 5 | | | | 1.28 | 3.30 | 30.0 | .74 | | | 646.4 | 117. | 5.53 | |
| 8 | | | | 1.35 | 3.50 | 29.8 | .78 | 3.26 | 0.96 | 707.0 | 119. | 5.96 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 915-924
Water color
(Forel) 6
(Munsell) 10G 7/6

Station No. 6-1
Latitude 37°06.48'N
Longitude 122°18.69'W
Secchi Depth 4.5m
Sonic Depth 12.8m
Weather

Wind Speed 2k
Wind Direct. (True) 90°
Air Temp (Dry Bulb) 9.44°C
~~Air Temp (Wet Bulb)~~ 9.78°C
Surface Bucket Temp (°C) 10
Visibility 15+

Clouds, Type Cum
Cloud Cover (%) 40
Swell Direction NW
~~Height~~ 3-4
Length 60
Comments 1/2 mile off
S. side Año Nuevo Beach
in South Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.49 | 20.7 | 28.7 | 1.96 | 1.82 | 0.10 | 130.1 | 14.7 | 8.84 | |
| 4 | | | | 2.23 | 20.8 | 29.6 | 1.96 | 1.72 | | 172.9 | 21.2 | 8.16 | |
| 7 | | | | 2.10 | 21.6 | 30.9 | 2.04 | 1.60 | | 298.8 | 37.6 | 7.95 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 945-954
Water color
(Forel) 5
(Munsell) 5BG 7/6

Station No. 6-2
Latitude 37°06.21'N
Longitude 122°19.09'W
Secchi Depth 4.5m
Sonic Depth 15.2m
Weather

Wind Speed 6-8k
Wind Direct. (True) 330°
Air Temp (Dry Bulb) 8.33°C
Air Temp (Wet Bulb) 7.22°C
Surface Bucket Temp (°C) 10.1
Visibility 15

Clouds, Type Cum
Cloud Cover (%) 85
Swell Direction NW
Height 3-4
Length 60
Comments South Side
Año Nuevo - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.83 | 19.1 | 27.8 | 1.50 | | | 140.9 | 13.2 | 10.70 | |
| 5 | | | | 2.51 | 19.4 | 28.0 | 1.55 | 0.75 | | 130.0 | 14.0 | 9.30 | |
| 10 | | | | 2.14 | 19.8 | 28.7 | 1.55 | 1.16 | 0.49 | 168.3 | 18.4 | 9.16 | |
| 15 | | | | 2.44 | 22.0 | 37.1 | 2.24 | | | 378.5 | 31.1 | 12.09 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 5/6/77
Time 1024-1036
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 6-3
Latitude 37°05.48' N
Longitude 122°19.98' W
Secchi Depth 7 m
Sonic Depth 27.4 m
Weather

Wind Speed 2 k
Wind Direct. (True) 160°
Air Temp (Dry Bulb) 9.44°C
Air Temp (Wet Bulb) 7.22°C
Surface Bucket Temp (°C) 10.3
Visibility 15+

Clouds, Type cum
Cloud Cover (%) 20
Swell Direction NW
Height 3-4
Length 60
Comments South off Island at Año Nuevo SW - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.34 | 19.1 | 28.2 | 1.96 | | | 104.9 | 12.1 | 8.71 | |
| 5 | | | | 2.17 | 19.2 | 28.6 | 1.94 | | | 111.1 | 14.3 | 7.75 | |
| 10 | | | | 2.42 | 20.3 | 30.8 | 2.04 | 2.49 | 0.11 | 179.5 | 24.0 | 7.49 | |
| 20 | | | | 3.05 | 22.2 | 39.3 | 2.22 | 1.39 | 0.47 | 188.1 | 19.5 | 9.64 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 1109-1117
Water color (Forel) 10
(Munsell) 10GY 7/6

Station No. 6-4
Latitude 37°06.52'N
Longitude 122°20.62'W
Secchi Depth 3m
Sonic Depth 18m
Weather

Wind Speed 2k
Wind Direct. (True) 180°
Air Temp (Dry Bulb) 9.72° C
Air Temp (Wet Bulb) 7.5°C
~~Surface Bucket Temp~~ (°C) 10.5°
Visibility 15+

Clouds, Type Cum
Cloud Cover (%)
Swell Direction NW
Height 3-4
Length 60
Comments 1/2 mile off Año Nuevo

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.68 | 20.0 | 30.7 | 2.04 | 1.61 | | | | | |
| 5 | | | | 2.70 | 20.6 | 31.5 | 2.07 | 1.77 | | | | | |
| 15 | | | | 2.81 | 23.1 | 35.2 | 2.21 | 1.57 | 0.23 | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | ~~Lottles missing~~ #100-102 | | | C/N |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 1150-1200
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 6-5
Latitude 37°06.85'N
Longitude 122°21.33'W
Secchi Depth 3m
Sonic Depth 27.4m
Weather

Wind Speed 6k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 10°C
Air Temp (Wet Bulb) 8.06°C
Surface Bucket Temp (°C) 10.5
Visibility 15+

Clouds, Type Cum
Cloud Cover (%) 40
Swell Direction NW
Height 3-4
Length 60
Comments NW 1 mile Año Nuevo Island at Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.73 | 20.8 | 32.3 | 2.09 | | | 178.7 | 11.8 | 15.11 | |
| 5 | | | | 3.00 | 20.6 | 32.8 | 2.10 | | | 1227.7 | 102.7 | 11.95 | |
| 10 | | | | 3.12 | 21.2 | 32.1 | 2.18 | 1.50 | | 313.5 | 31.5 | 9.97 | |
| 20 | | | | 2.63 | 23.0 | 33.3 | 2.28 | 1.56 | | 496.2 | 54.2 | 9.15 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 1 | Station No. | 6-6 | Wind Speed | 6k | Clouds, Type | Cum |
| Vessel | R/V ACANIA | Latitude | 37°07.06'N | Wind Direct. (True) | 230° | Cloud Cover (%) | 40 |
| Date | 5/6/77 | Longitude | 122°22.13'W | Air Temp (Dry Bulb) | 10.50°C | Swell Direction | NW |
| Time | 1230-1240 | Secchi Depth | 3.5m | Air Temp (Wet Bulb) | 8.33°C | Height | 3-4 |
| Water color (Forel) | 8 | Sonic Depth | 39.6m | Surface Bucket Temp (°C) | 11.1 | Length | 60 |
| (Munsell) | 5G 7/6 | Weather | | Visibility | 15+ | Comments | W 1 1/2 miles Año Nuevo |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.50 | 16.05 | 23.88 | 1.77 | | | 185.4 | 22.3 | 8.32 | |
| 5 | | | | 2.68 | 16.47 | 24.83 | 1.79 | | | 193.7 | 25.2 | 7.70 | |
| 10 | | | | 2.60 | 16.32 | 24.33 | 1.77 | 1.41 | 0.88 | 263.4 | 37.3 | 7.06 | |
| 20 | | | | 2.88 | 17.60 | 26.6 | 1.91 | 0.97 | 1.91 | 334.1 | 33.5 | 9.98 | |
| 30 | | | | 2.52 | 24.02 | 33.5 | 2.30 | 1.29 | | 128.9 | 9.2 | 14.06 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 1 | Station No. | 6-7 | Wind Speed | 2-6k | Clouds, Type | Cum |
| Vessel | R/V ACANIA | Latitude | 37°06.08'N | Wind Direct. (True) | 240° | Cloud Cover (%) | 10 |
| Date | 5/6/77 | Longitude | 122°23.34'W | Air Temp (Dry Bulb) | 11.11°C | Swell Direction | NW |
| Time | 1335-1350 | Secchi Depth | 6m | Air Temp (Wet Bulb) | 8.89°C | Height | 3-4 |
| Water color (Forel) | 8 | Sonic Depth | 57.9m | Surface Bucket Temp (°C) | 12.1 | Length | 60 |
| (Munsell) | 5G 7/6 | Weather | | Visibility | 15+ | Comments | About 2 miles West Año Nuevo |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.40 | 7.75 | 8.02 | 1.11 | | | 241.1 | 35.9 | 6.72 | |
| 5 | | | | 1.48 | 7.46 | 7.53 | 1.07 | | | 225.5 | 28.7 | 7.86 | |
| 10 | | | | 1.62 | 7.87 | 7.88 | 1.08 | | | 236.6 | 27.5 | 8.60 | |
| 20 | | | | 1.13 | 8.11 | 8.05 | 1.10 | 1.32 | 0.26 | 324.8 | 34.7 | 9.36 | |
| 40 | | | | 2.49 | 13.58 | 17.20 | 1.52 | | | 177.1 | 18.6 | 9.51 | |
| 50 | | | | 2.08 | 21.72 | 32.46 | 2.16 | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 1 | Station No. | 6-8 | Wind Speed | 4-5k | Clouds, Type | Cum |
| Vessel | R/V ACANIA | Latitude | 37°06.07'N | Wind Direct. (True) | 270° | Cloud Cover (%) | 10 |
| Date | 5/6/77 | Longitude | 122°24.04'W | Air Temp (Dry Bulb) | 11.67°C | Swell Direction | NW |
| Time | 1440-1453 | Secchi Depth | 5.5m | Air Temp (Wet Bulb) | 8.89°C | Height | 3-4 |
| Water color (Forel) | 5 | Sonic Depth | 58m | Surface Bucket Temp (°C) | 12.3 | Length | 60 |
| (Munsell) | 5BG 7/6 | Weather | | Visibility | 15+ | Comments | About 2 1/2 miles west Año Nuevo |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .99 | 6.86 | 7.30 | .96 | 1.61 | 0.05 | 315.7 | 41.5 | 7.62 | |
| 5 | | | | 1.03 | 6.83 | 6.91 | .96 | 1.77 | | 300.1 | 36.5 | 8.22 | |
| 10 | | | | 1.80 | 8.32 | 8.20 | 1.06 | 1.59 | | 231.6 | 25.8 | 8.99 | |
| 20 | | | | 2.20 | 11.37 | 12.68 | 1.36 | | | 197.1 | 21.2 | 9.30 | |
| 40 | | | | 2.59 | 18.81 | 24.65 | 1.85 | 0.57 | | 166.5 | 17.7 | 9.41 | |
| 55 | | | | 1.76 | 27.11 | 36.75 | 2.28 | | | 135.9 | 9.2 | 14.81 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 1620-1637
Water color (Forel) 5
(Munsell) 5G 7/6

Station No. 6-9
Latitude 37°05.54'N
Longitude 122°32.58'W
Secchi Depth 10m
Sonic Depth 98m
Weather

Wind Speed 4k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 11.94°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 12.8
Visibility 15+

Clouds, Type Cum
Cloud Cover (%)
Swell Direction NW
Height 3-5
Length 60
Comments Well West Año Nuevo

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc filtered | | | | .36 | 8.05 | 12.89 | 1.06 | 0.59 | 0.56 | 158.1 | 20.9 | 7.58 | |
| 5 | | | | .31 | 7.74 | 11.90 | .99 | 0.78 | 0.13 | 155.6 | 18.1 | 8.59 | |
| 10 | | | | .26 | 8.00 | 11.91 | .99 | | | 201.3 | 22.9 | 8.80 | |
| 20 | | | | .72 | 9.96 | 12.44 | 1.15 | | | 101.9 | 9.2 | 11.06 | |
| 40 | | | | 1.08 | 18.67 | 24.19 | 1.72 | 0.80 | | 82.7 | 4.6 | 17.85 | |
| 60 | | | | 1.98 | 18.90 | 20.91 | 1.73 | 0.15 | 0.60 | 188.1 | 15.0 | 12.58 | |
| sfc unfiltered | | | | .19 | 7.65 | 11.95 | .99 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 1815-1832
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 6-10
Latitude 37°06.01'N
Longitude 122°38.82'W
Secchi Depth 10m
Sonic Depth 113m
Weather

Wind Speed 4-7k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 12.22°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 12.6
Visibility 15+

Clouds, Type ~~Cum~~
Cloud Cover (%) 10
Swell Direction NW
Height 4-6
Length 60
Comments About 15 miles west off Año Nuevo

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .31 | | 12.24 | 1.01 | 0.65 | | 83.8 | 7.3 | 11.49 | |
| 5 | | | | .34 | | 13.53 | 1.02 | 0.60 | | 85.9 | 8.0 | 10.70 | |
| 10 | | | | .22 | | 15.10 | 1.02 | 1.22 | 0.01 | 127.2 | 11.5 | 11.05 | |
| 20 | | | | .45 | | 15.28 | 1.10 | 0.76 | | 69.0 | 6.9 | 10.04 | |
| 40 | | | | 1.26 | | 22.15 | 1.58 | | | 105.9 | 8.9 | 11.97 | |
| 60 | | | | 1.89 | | 24.65 | 1.81 | | | 41.9 | 2.6 | 16.03 | |
| 100 | | | | .35 | | 43.97 | 2.33 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/6/77
Time 1920-1932
Water color (Forel)
(Munsell) 5G 5/8

Station No. 6-11
Latitude 37°04.29'N
Longitude 122°37.36'W
Secchi Depth 16m
Sonic Depth ~~112m~~
Weather

Wind Speed 2-4k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 11.39°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 13.6
Visibility 15+

Clouds, Type Cirrus/cum
Cloud Cover (%) 15
Swell Direction NW
Height 4-6
Length 60
Comments 15 miles west Año Nuevo

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .13 | .92 | 4.41 | .68 | | | 78.9 | 5.7 | 13.77 | |
| 5 | | | | .31 | 1.03 | 4.29 | .68 | | | 68.4 | 3.9 | 17.33 | |
| 10 | | | | .28 | 1.76 | 4.84 | .71 | | | 82.1 | 3.0 | 27.55 | |
| 20 | | | | .23 | 6.18 | 9.80 | .94 | 0.90 | 0.35 | 448.8 | 55.9 | 8.02 | |
| 40 | | | | .55 | 10.06 | 13.75 | 1.13 | | | 93.4 | 9.6 | 9.70 | |
| 60 | | | | 3.32 | 16.38 | 16.89 | 1.64 | 0.72 | | 65.0 | 6.2 | 10.5 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/7/77
Time 1313-1327
Water color (Forel)
(Munsell) 10G 7/6

Station No. 7-1
Latitude 36°41.90' N
Longitude 122°02.83' W
Secchi Depth 10 m
Sonic Depth 1829 m
Weather

Wind Speed 8k
Wind Direct. (True) 190°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 12.0
Visibility 10

Clouds, Type cum
Cloud Cover (%) 90
Swell Direction NW
Height 2-3
Length 60
Comments NW of Monterey HBR ( Monterey Canyon )

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.62 | 8.02 | 8.59 | 0.97 | 0.94 | 0.23 | 121.9 | 13.1 | 9.33 | |
| 5 | | | | 1.37 | 8.03 | 8.55 | 1.03 | | | 117.8 | 10.1 | 11.67 | |
| 10 | | | | 1.39 | 8.27 | 8.91 | 1.07 | 0.99 | | 138.6 | 14.4 | 9.60 | |
| 20 | | | | 1.99 | 11.24 | 11.93 | 1.33 | 0.91 | | 123.3 | 6.7 | 18.55 | |
| 40 | | | | 2.11 | 16.78 | 22.08 | 1.80 | | | 60.3 | 4.1 | 14.60 | |
| 60 | | | | 1.64 | 23.38 | 32.21 | 2.12 | 2.09 | | 50.9 | 2.6 | 19.49 | |
| 100 | | | | 1.15 | 27.03 | 35.65 | 2.37 | | | 42.2 | 2.1 | 20.44 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/9/77
Time 1232-1245
Water color (Forel) 5
(Munsell) 10G 5/6

Station No. 9-1
Latitude 36°51.51' N
Longitude 121°57.37' W
Secchi Depth 10 m
Sonic Depth 131 m
Weather

Wind Speed 4 k
Wind Direct. (True) 310°
Air Temp (Dry Bulb) 11.94°C
Air Temp (Wet Bulb) 10.56°C
Surface Bucket Temp (°C) 11.55
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 100
Swell Direction NW
Height 2
Length 150
Comments 6.0 miles South Soquel Point over end of Monterey Canyon

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.73 | 12.27 | 16.15 | 1.84 | 0.72 | 0.11 | 98.7 | 8.4 | 11.83 | |
| 5 | | | | 2.20 | 13.13 | 17.02 | 1.48 | 1.13 | 0.23 | 90.9 | 8.0 | 11.33 | |
| 10 | | | | 2.05 | 14.26 | 19.80 | 1.58 | 1.22 | | 172.6 | 20.1 | 8.59 | |
| 20 | | | | 2.75 | 15.99 | 23.08 | 1.74 | 1.24 | | 111.1 | 9.9 | 11.27 | |
| 40 | | | | 2.33 | 20.55 | 27.96 | 1.79 | 0.73 | 0.30 | 53.7 | 5.3 | 10.19 | |
| 60 | | | | 1.69 | 25.27 | 34.95 | 2.22 | 0.47 | | 67.7 | 4.5 | 15.05 | |
| 100 filtered | | | | 1.50 | 28.07 | 57.74 | 2.09 | 1.24 | | 78.1 | 3.1 | 25.42 | |
| 100 unfiltered | | | | 1.01 | 28.12 | 57.99 | 2.03 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/8/77
Time 1324-1335
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 9-2
Latitude 36°53.65' N
Longitude 121°56.54' W
Secchi Depth 9 m
Sonic Depth 30.5 m
Weather

Wind Speed 4 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 12.22°C
Air Temp (Wet Bulb) 10.83°C
Surface Bucket Temp (°C) 12.6
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 100
Swell Direction NW
Height 2
Length 150
Comments 4 miles South Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .44 | 12.63 | 21.26 | 1.24 | 1.50 | 0.41 | 149.8 | 22.3 | 6.72 | |
| 5 | | | | .58 | 13.20 | 20.76 | 1.27 | 1.91 | | 170.7 | 21.3 | 8.02 | |
| 10 | | | | .50 | 13.39 | 22.21 | 1.28 | 1.90 | 2.40 | 125.8 | 16.0 | 7.86 | |
| 20 | | | | .49 | 13.19 | 16.30 | 1.24 | 1.72 | 1.45 | 136.7 | 19.5 | 7.01 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/9/77
Time 1500-1515
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 9-3
Latitude 36°54.56' N
Longitude 121°56.12' W
Secchi Depth 7.5 m
Sonic Depth 25.6 m
Weather

Wind Speed 8-9 k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 11.94°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 12.1
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 100
Swell Direction NW
Height 2
Length 150
Comments 3 miles South Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | - | | | | 3.34 | | | | | |
| 5 | | | | .28 | 11.92 | 21.76 | 1.18 | 2.05 | 0.58 | | | | |
| 10 | | | | .29 | 11.17 | 20.94 | 1.17 | 3.90 | 3.14 | | | | |
| 20 | | | | .48 | 11.92 | 20.79 | 1.23 | 9.34 | 4.94 | | | | |
| | | | | | | | | | | C/N not taken, pump being fixed | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/9/77
Time 1538-1550
Water color (Forel) 11
(Munsell) 10GY 5/6

Station No. 9-4
Latitude 36°55.48'N
Longitude 121°55.82'W
Secchi Depth 4.5 m
Sonic Depth 21.5 m
Weather

Wind Speed 6-8 k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 11.94°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 12.2
Visibility 5

Clouds, Type strat/cum
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 150
Comments 2.52 SE Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.40 | 4.24 | 15.03 | 0.73 | 4.21 | 4.01 | 461.5 | 99.7 | 5.64 | |
| 5 | | | | 0.29 | 3.97 | 14.11 | 0.72 | 10.38 | 5.83 | 233.6 | 41.5 | 5.63 | |
| 10 | | | | 0.40 | 7.95 | 16.79 | 0.93 | 10.74 | 3.40 | 200.2 | 35.8 | 5.60 | |
| 20 | | | | 0.74 | 12.67 | 19.91 | 1.22 | 3.99 | 1.28 | 185.1 | 28.5 | 6.50 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/9/77
Time 1632-1644
Water color (Forel) 7
(Munsell) 10Y 7/6

Station No. 9-5
Latitude 36°56.36' N
Longitude 121°55.45' W
Secchi Depth 3.6 m
Sonic Depth 17.1 m
Weather

Wind Speed 8 k
Wind Direct. (True) 290°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 10.56°C
Surface Bucket Temp (°C) 12.4
Visibility 5

Clouds, Type strat/cum
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 150
Comments 2 miles SE Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.66 | ND | 4.38 | 0.36 | 11.05 | 6.82 | 1263.1 | 174.9 | 7.22 | |
| 5 | | | | 0.39 | 0.07 | 4.51 | 0.38 | 14.68 | 6.43 | 794.3 | 111.2 | 7.14 | |
| 10 | | | | 0.63 | 3.65 | 10.25 | 0.67 | 34.26 | 12.54 | 1059.8 | 210.9 | 5.03 | |
| 15 | | | | 1.30 | 6.10 | 15.17 | 0.95 | 11.20 | 4.98 | 482.4 | 75.0 | 6.43 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/9/77
Time 1714
Water color (Forel)
(Munsell) 10Y 7/6

Station No. 9-6
Latitude 36°57.30' N
Longitude 121°55.18' W
Secchi Depth 2
Sonic Depth 11.6 m
Weather

Wind Speed 8 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 11.67°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 12.8
Visibility 5

Clouds, Type strat/cum
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 160
Comments 1 mile off Soquel Cove Beach Concrete Ship Pier

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.71 | ND | 0.87 | 0.34 | 9.20 | 9.45 | 1453.3 | 171.0 | 8.50 | |
| 5 | | | | 0.47 | ND | 0.48 | 0.31 | 7.92 | 5.98 | 1341.9 | 149.0 | 9.01 | |
| 8 | | | | 0.71 | ND | 0.76 | 0.44 | 10.36 | 6.76 | 1251.9 | 162.5 | 7.70 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 945-953
Water color (Forel) 10
(Munsell) 10GY 7/6

Station No. 10-1
Latitude 36°57.47' N
Longitude 121°55.01' W
Secchi Depth 3.5 m
Sonic Depth 9.8 m
Weather

Wind Speed 2 k
Wind Direct. (True) 190°
Air Temp (Dry Bulb) 12.50°C
Air Temp (Wet Bulb) 11.39°C
Surface Bucket Temp (°C) 13.3
Visibility 10

Clouds, Type cum/strat
Cloud Cover (%) 50
Swell Direction NW
Height 1
Length
Comments 1 mile South Soquel Cove Beach - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .15 | 0.48 | .51 | .32 | 3.30 | 3.17 | 655.3 | 49.3 | 13.28 | |
| 5 | | | | .19 | 1.93 | 4.54 | .43 | 13.26 | 7.48 | 998.8 | 117.2 | 8.52 | |
| 8 | | | | 2.85 | 9.20 | 18.05 | 1.16 | 5.02 | 1.59 | 474.4 | 73.7 | 6.44 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1016-1024
Water color (Forel)
(Munsell) 5GY 7/6

Station No. 10-2
Latitude 36°56.21' N
Longitude 121°55.54' W
Secchi Depth 2.5 m
Sonic Depth 17.1 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 220°
Air Temp (Dry Bulb) 12.50°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 12.4
Visibility 10

Clouds, Type cum/strat
Cloud Cover (%) 60
Swell Direction NW
Height 1
Length
Comments 2 miles South Soquel Cove Beach - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .19 | .38 | 2.06 | .29 | 6.25 | 4.23 | 1307. | 135. | 9.71 | |
| 5 | | | | .22 | 4.23 | 15.39 | .63 | 12.43 | 3.85 | 668.7 | 123. | 5.45 | |
| 10 | | | | .75 | 11.37 | 20.90 | 1.25 | 5.08 | 0.46 | 196.0 | 25.1 | 7.81 | |
| 15 | | | | 2.50 | 14.81 | 21.63 | 1.58 | 1.78 | 1.67 | 312.4 | 33.9 | 9.21 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1045-1051
Water color (Forel)
(Munsell) 5GY 7/6

Station No. 10-3
Latitude 36°55.43' N
Longitude 121°55.93' W
Secchi Depth 2.5 m
Sonic Depth 17 m
Weather

Wind Speed 2 k
Wind Direct. (True) 210°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 11.67°C
Surface Bucket Temp (°C) 12.7
Visibility 10

Clouds, Type cum/strat
Cloud Cover (%) 10
Swell Direction NW
Height 1-2
Length variable
Comments 2.5 miles SE Soquel Point - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .19 | .73 | 2.06 | .30 | 16.76 | 7.07 | 608.4 | 70.6 | 8.62 | |
| 5 | | | | .24 | 7.70 | 15.39 | .87 | 7.73 | 2.47 | 355.0 | 52.5 | 6.76 | |
| 10 | | | | .26 | 12.67 | 20.90 | 1.16 | 3.33 | 1.22 | 173.4 | 26.1 | 6.65 | |
| 15 | | | | .90 | 13.95 | 21.64 | 1.40 | 2.15 | .76 | 142.8 | 20.0 | 7.13 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1118-1126
Water color (Forel)
(Munsell) 5GY 7/6

Station No. 10-4
Latitude 36°54.49' N
Longitude 121°56.17' W
Secchi Depth 2.5 m
Sonic Depth 25 m
Weather

Wind Speed 4 k
Wind Direct. (True) 230°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 10.56°C
Surface Bucket Temp (°C) 12.2
Visibility 10

Clouds, Type strat/cum
Cloud Cover (%) 70
Swell Direction NW
Height 1-2
Length Variable
Comments 3 miles SE Soquel Point - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .15 | .74 | 3.97 | .30 | 8.76 | 4.33 | 441.3 | 47.9 | 9.21 | |
| 5 | | | | .10 | .58 | 3.86 | .36 | 13.26 | 9.46 | 690.5 | 83.7 | 8.25 | |
| 10 | | | | .18 | 9.81 | 18.28 | .97 | 4.91 | 3.41 | 332.5 | 49.0 | 6.78 | |
| 20 | | | | .55 | 15.6 | 21.75 | 1.37 | 3.59 | 0.12 | 388.1 | 44.3 | 8.76 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1145-1155
Water color (Forel)
(Munsell) 5GY 5/6

Station No. 10-5
Latitude 36°53.52' N
Longitude 121°56.80' W
Secchi Depth 3 m
Sonic Depth 28 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 210°
Air Temp (Dry Bulb) 13.06°C
Air Temp (Wet Bulb) 11.67°C
Surface Bucket Temp (°C) 12.5
Visibility 15+

Clouds, Type cum/strat
Cloud Cover (%) 80
Swell Direction NW
Height 1-2
Length 150+
Comments 4 miles SE Soquel Point - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .17 | 1.71 | 9.68 | .44 | 6.59 | 6.39 | 988.5 | 162. | 6.12 | |
| 5 | | | | .22 | 2.58 | 12.10 | .50 | 11.68 | 0.96 | 817.0 | 146. | 5.62 | |
| 10 | | | | .30 | 15.39 | 18.68 | 1.05 | 4.58 | 0.16 | 233.3 | 32.9 | 7.10 | |
| 20 | | | | 1.40 | 17.65 | 23.71 | 1.59 | 1.16 | 0.91 | 169.3 | 18.9 | 8.98 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1123-1240
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 10-6
Latitude 36°51.56' N
Longitude 121°57.23' W
Secchi Depth 8 m
Sonic Depth 128 m
Weather

Wind Speed 6-8k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 11.8
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 85
Swell Direction NW
Height 1-2
Length 150
Comments 6 miles off Soquel Pt(south) - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .63 | 12.84 | 19.30 | 1.25 | 2.66 | 0.64 | 155.9 | 21.3 | 7.31 | |
| 5 | | | | .52 | 12.64 | 19.12 | 1.24 | 1.32 | 0.25 | 196.1 | 22.6 | 8.68 | |
| 10 | | | | .53 | 12.65 | 19.18 | 1.24 | 1.80 | 1.38 | 166.2 | 20.8 | 7.98 | |
| 20 | | | | 2.06 | 14.42 | 19.92 | 1.49 | 1.61 | | 61.1 | 2.9 | 20.80 | |
| 40 | | | | 1.36 | 22.28 | 27.49 | 1.94 | 1.00 | | | | | |
| 60 | | | | 1.90 | 25.63 | 36.77 | 2.22 | 0.64 | | 88.5 | 4.1 | 21.57 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1423-1430
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 10-7
Latitude 36°51.50'N
Longitude 121°57.22'W
Secchi Depth 8m
Sonic Depth 118.9m
Weather

Wind Speed 8k
Wind Direct. (True) 300°
Air Temp (Dry Bulb) 11.39°C
~~Air Temp (Wet Bulb)~~ 9.72°C
Surface Bucket Temp (°C) 11.8
Visibility 15

Clouds, Type Cum/Strat
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length 100
Comments 5.6 miles SE Soquel Pt. - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.08 | 12.31 | 19.94 | 1.31 | 1.10 | 0.08 | 176.8 | 18.2 | 9.71 | |
| 5 | | | | 1.16 | 11.97 | 20.24 | 1.31 | 2.89 | 2.80 | 153.1 | 16.7 | 9.15 | |
| 10 | | | | 1.13 | 11.99 | 19.80 | 1.33 | 1.06 | 0.45 | 159.8 | 16.7 | 9.55 | |
| 20 | | | | .98 | 11.80 | 18.34 | 1.27 | | 1.07 | 123.6 | 12.3 | 10.02 | |
| 40 | | | | 1.58 | 21.72 | 28.13 | 1.93 | | 5.56 | 81.0 | 5.0 | 16.21 | |
| 60 | | | | 1.92 | 25.42 | 37.30 | 2.24 | | | 75.8 | 2.1 | 35.53 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1455-1509
Water color (Forel) 11
(Munsell) 10GY 7/6

Station No. 10-8
Latitude 36°52.74'N
Longitude 121°56.91'W
Secchi Depth 4m
Sonic Depth 47.5m
Weather

Wind Speed 8-10k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 11.39°C
Air Temp (Wet Bulb) 10.00°C
Surface Bucket Temp (°C) 12.3
Visibility 10

Clouds, Type Strat/Cum
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 100
Comments 4.7 miles South Soquel Pt. - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .35 | 5.22 | 15.68 | .76 | 7.84 | | not enough water in sample bottle | | | |
| 5 | | | | .28 | 6.81 | 17.08 | .84 | 8.87 | 4.22 | 540.0 | 81.1 | 6.66 | |
| 10 | | | | .61 | 11.36 | 19.58 | 1.16 | 0.53 | 0.43 | 192.9 | 25.9 | 7.45 | |
| 20 | | | | 1.09 | 13.91 | 21.81 | 1.38 | 2.63 | 0.44 | 127.4 | 12.5 | 10.18 | |
| 40 | | | | 2.13 | [illegible] | 27.99 | 1.84 | 1.28 | 0.33 | 112.2 | 12.3 | 9.13 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1523-1533
Water color (Forel) 11
(Munsell) 10GY 7/6

Station No. 10-9
Latitude 36°53.60'N
Longitude 121°56.51'W
Secchi Depth 4m
Sonic Depth 26.7m
Weather

Wind Speed 8-12k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 10.00°C
Surface Bucket Temp (°C) 12.2
Visibility 15+

Clouds, Type Cum/Strat
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 100
Comments 4 miles south Soquel Pt.-Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .31 | 4.71 | 16.37 | .72 | 7.83 | 6.17 | 1037.4 | 156.5 | 6.63 | |
| 5 | | | | .37 | 4.48 | 15.97 | .70 | 7.77 | 6.19 | 669.7 | 95.7 | 7.00 | |
| 10 | | | | .33 | 9.35 | 18.57 | .96 | 9.36 | 4.42 | 389.5 | 59.9 | 6.51 | |
| 20 | | | | .44 | 11.29 | 19.74 | 1.10 | 7.12 | 3.12 | 246.9 | 32.1 | 7.69 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/10/77
Time 1522-1602
Water color (Forel)
(Munsell) 5GY 7/6

Station No. 10-10
Latitude 36°54.63'N
Longitude 121°56.12'W
Secchi Depth 3m
Sonic Depth 25.6m
Weather

Wind Speed 6-8k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 12.22°C
Air Temp (Wet Bulb) 10.20°C
Surface Bucket Temp (°C) 12.5
Visibility 15+

Clouds, Type Cum/Strat
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 100
Comments 3 miles South Soquel Pt.-Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .49 | .78 | 7.80 | .42 | 14.97 | 12.37 | 900.5 | 7.8 | 115.0 | |
| 5 | | | | .46 | .77 | 7.61 | .40 | 9.10 | 0.02 | 1079.0 | 8.0 | 134.2 | |
| 10 | | | | .46 | 1.67 | 9.09 | .51 | 5.31 | 2.14 | 429.3 | 4.5 | 77.4 | |
| 20 | | | | .29 | 9.31 | 17.50 | .92 | 1.81 | 3.23 | 148.4 | 7.8 | 19.0 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 10/11/77
Time 906-913
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 11-1
Latitude 37°06.70'N
Longitude 122°20.56'W
Secchi Depth 4m
Sonic Depth 16.8m
Weather

Wind Speed 1-2k
Wind Direct. (True) 180°
Air Temp (Dry Bulb) 11.37°C
Air Temp (Wet Bulb) 9.72°C
Surface Bucket Temp (°C) 11.8
Visibility 10+

Clouds, Type CUM/STRAT
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length 100
Comments Half mile west of Año Nuevo. Plane flew over 20 min. after

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.05 | 12.05 | 20.09 | 1.44 | 1.41 | 0.50 | 123.3 | 10.3 | 11.95 | |
| 5 | | | | 1.90 | 12.58 | 21.03 | 1.44 | 2.10 | 0.33 | 207.4 | 17.5 | 11.84 | |
| 10 | | | | 2.10 | 11.97 | 19.94 | 1.40 | 0.89 | 0.49 | 142.8 | 20.2 | 7.06 | |
| 15 | | | | 2.88 | 15.17 | 23.86 | 1.66 | 1.70 | 0.18 | 110.8 | 12.1 | 9.19 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/11/77
Time 955-1007
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 11-2
Latitude 37°06.02'N
Longitude 122°21.57'W
Secchi Depth 6m
Sonic Depth 44.2m
Weather

Wind Speed 4k
Wind Direct. (True) 230°
Air Temp (Dry Bulb) 11.67°C
Air Temp (Wet Bulb) 10.00°C
Surface Bucket Temp (°C) 11.6
Visibility 10+

Clouds, Type Strat/Cum
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length 100
Comments 1.5 miles W. Año Nuevo-Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.41 | 9.49 | 15.44 | 1.15 | 1.18 | 0.42 | 170.1 | 19.7 | 8.65 | |
| 5 | | | | 1.54 | 9.95 | 15.32 | 1.22 | 1.42 | 0.94 | 189.6 | 24.1 | 7.86 | |
| 10 | | | | 1.92 | 11.73 | 18.25 | 1.35 | 1.71 | 0.91 | 197.6 | 23.0 | 8.59 | |
| 20 | | | | 2.22 | 11.51 | 17.84 | 1.38 | 1.73 | 0.27 | 109.4 | 12.7 | 8.61 | |
| 30 | | | | 3.06 | 19.77 | 32.85 | 2.07 | 0.61 | 0.74 | 175.5 | 5.2 | 33.61 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/11/77
Time 1040-1049
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 11-3
Latitude 37°04.87'N
Longitude 122°23.16'W
Secchi Depth 7.5m
Sonic Depth 69.5m
Weather

Wind Speed 2-3k
Wind Direct. (True) 190°
Air Temp (Dry Bulb) 10.83°C
Air Temp (Wet Bulb) 9.44°C
~~Surface Bucket Temp~~ (°C) 12.00
Visibility 10+

Clouds, Type Strat/Cum
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length 100
Comments 3.5 miles off Año Nuevo-Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .73 | 4.35 | 9.28 | .82 | 2.38 | | 295.9 | 31.1 | 9.53 | |
| 5 | | | | .52 | 4.16 | 8.32 | .78 | 1.46 | | 285.0 | 34.6 | 8.24 | |
| 10 | | | | .75 | 7.19 | 12.16 | 1.00 | 1.82 | 0.87 | 239.3 | 24.2 | 9.88 | |
| 20 | | | | 2.48 | 11.15 | 16.49 | 1.35 | 0.87 | 1.07 | 256.3 | 21.0 | 12.19 | |
| 40 | | | | 2.89 | 15.75 | 20.84 | 1.69 | 1.20 | 0.52 | | | | |
| 60 | | | | 1.99 | 22.53 | 31.45 | 2.05 | 0.68 | 0.42 | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/11/77
Time 1116-1124
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 11-4
Latitude 37°03.25'N
Longitude 122°25.10'W
Secchi Depth 6m
Sonic Depth 315m
Weather

Wind Speed 2-3k
Wind Direct. (True) 190°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 12.1
Visibility 10+

Clouds, Type Strat/Cum
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length 100
Comments 6.5 miles W. Año Nuevo-Airplane Observation: Ship in Lens of Warm Water

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.18 | 3.72 | 7.60 | .88 | | | 277.0 | 36.8 | 7.54 | |
| 5 | | | | .57 | 3.21 | 7.81 | .81 | 1.36 | 3.01 | 355.8 | 56.0 | 6.35 | |
| 10 | | | | .97 | 3.26 | 8.85 | .88 | 1.72 | 2.42 | 244.6 | 20.8 | 11.77 | |
| 20 | | | | 2.18 | 9.45 | 13.5 | 1.23 | 1.17 | 0.34 | 140.7 | 14.1 | 10.00 | |
| 40 | | | | 2.60 | 18.9 | 27.4 | 1.92 | 0.82 | | 78.8 | 6.38 | 12.36 | |
| 60 | | | | 1.29 | 26.8 | 38.8 | 2.31 | 0.80 | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/11/77
Time 1415-1428
Water color (Forel) 4
(Munsell) 10 G 7/6

Station No. 11-5
Latitude 36°56.18'N
Longitude 122°34.11'W
Secchi Depth 14m
Sonic Depth 1000m
Weather

Wind Speed 5-6k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 10.00°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 12.00
Visibility 1

Clouds, Type
Cloud Cover (%) 100
Swell Direction NW
Height 1-2
Length 10
Comments 15 miles SW Año Nuevo

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .30 | 3.27 | 9.34 | .83 | 2.40 | 0.14 | 86.3 | 5.2 | 16.66 | |
| sfc | | | | .32 | 3.41 | 9.35 | .85 | | | | | | |
| 5 | | | | .27 | 3.16 | 9.05 | .86 | 1.07 | | 84.1 | 10.1 | 8.33 | |
| 5 | | | | .33 | 3.26 | 9.07 | .85 | | | | | | |
| 10 | | | | .28 | 3.20 | 8.76 | .55 | 1.79 | | 101.1 | 16.8 | 6.01 | |
| 10 | | | | .34 | 3.53 | 9.06 | .84 | | | | | | |
| 20 | | | | .25 | 4.65 | 9.52 | .91 | 1.24 | 0.50 | 85.2 | 12.8 | 6.64 | |
| 40 | | | | .74 | 7.94 | 12.03 | 1.08 | 1.47 | | 88.6 | 10.6 | 8.32 | |
| 60 | | | | 1.05 | 11.97 | 15.01 | 1.28 | ~~0.94~~ | ~~0.16~~ | 60.0 | 3.9 | 15.21 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/11/77
Time 1655-1714
Water color (Forel)
(Munsell) 10B 5/8

Station No. 11-6
Latitude 36°45.37' N
Longitude 122°46.93' W
Secchi Depth 32 m
Sonic Depth 2377 m
Weather

Wind Speed 6-8 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 10.28°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 12.9
Visibility 5

Clouds, Type overcast
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length
Comments 30 miles SW of Año Nuevo

Filtered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .60 | .32 | 3.90 | .69 | 0.52 | 0.01 | 67.7 | 3.67 | 18.44 | |
| 5 | | | | .47 | .29 | 3.82 | .67 | 0.51 | | 148.4 | 3.67 | 40.45 | |
| 10 | | | | .52 | .30 | 3.81 | .68 | 0.36 | | | | | |
| 20 | | | | .61 | .38 | 4.14 | .70 | 0.44 | | | | | |
| 40 | | | | .30 | 10.5 | 13.96 | 1.28 | 0.98 | | | | | |
| 60 | | | | .29 | 17.2 | 20.74 | 1.63 | 1.50 | 0.97 | | | | |
| 80 | | | | .34 | 22.5 | 26.54 | 1.94 | 0.44 | 0.22 | | | | |
| 100 | | | | | | 26.82 | 2.03 | 0.64 | | | | | |
| 200 | | | | .36 | 27.8 | 30.62 | 2.33 | 0.51 | 0.25 | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/11/77
Time 1655-1714
Water color (Forel)
(Munsell) 10B 5/8

Station No. 11-6
Latitude 36°45.37' N
Longitude 122°46.93' W
Secchi Depth 32 m
Sonic Depth 2377 m
Weather

Wind Speed 6-8 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 10.28°C
Air Temp (Wet Bulb) 8.89°C
Surface Bucket Temp (°C) 12.9
Visibility 5

Clouds, Type overcast
Cloud Cover (%) 100
Swell Direction NW
Height 2-3
Length
Comments 30 miles SW of Año Nuevo

Unfiltered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .44 | .29 | 3.79 | .67 | 0.52 | 0.01 | | | | |
| 5 | | | | .38 | .29 | 3.85 | .67 | 0.64 | -0.19 | | | | |
| 10 | | | | .50 | .30 | 3.76 | .69 | 0.53 | -0.30 | | | | |
| 20 | | | | .29 | .39 | 4.10 | .70 | 0.97 | -0.89 | | | | |
| 40 | | | | .29 | 10.8 | 14.32 | 1.30 | 1.68 | -1.14 | | | | |
| 60 | | | | .33 | 17.3 | 21.03 | 1.66 | 1.50 | 0.97 | | | | |
| 80 | | | | .33 | 22.7 | 26.45 | 1.96 | 0.44 | 0.22 | | | | |
| 100 | | | | .21 | 24.3 | 26.92 | 2.03 | 1.09 | 19.58 | | | | |
| 200 | | | | .47 | 27.8 | 38.68 | 2.34 | 0.51 | 0.25 | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 950-1000
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 12-1
Latitude 36°49.64' N
Longitude 121°58.28' W
Secchi Depth 14 m
Sonic Depth 366 m
Weather

Wind Speed 2-3 k
Wind Direct. (True) 90°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 11.7
Visibility 10+

Clouds, Type strat/cum
Cloud Cover (%) 5
Swell Direction NW
Height 1
Length 100
Comments 7.5 miles South Soquel Pt. - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 1.13 | 8.89 | 12.08 | 1.19 | 0.86 | | | | | |
| 5 | | | | 0.99 | 8.91 | 12.07 | 1.18 | 1.64 | 0.16 | | | | |
| 10 | | | | 0.98 | 8.93 | 12.15 | 1.17 | 0.79 | 0.81 | | | | |
| 20 | | | | 1.10 | 10.36 | 13.98 | 1.25 | 1.24 | | | | | |
| 40 | | | | 2.18 | 19.96 | 26.16 | 1.92 | 0.46 | 0.30 | | | | |
| 60 | | | | 1.34 | 24.56 | 33.66 | 2.18 | 0.52 | 0.14 | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1037-1048
Water color (Forel) 11
(Munsell) 10GY 7/6

Station No. 12-2
Latitude 36°50.70' N
Longitude 121°57.89' W
Secchi Depth 4 m
Sonic Depth 109.7 m
Weather

Wind Speed Airs
Wind Direct. (True)
Air Temp (Dry Bulb) 12.50°C
Air Temp (Wet Bulb) 10.28°C
Surface Bucket Temp (°C) 13.2
Visibility 10

Clouds, Type strat/cum
Cloud Cover (%) 5
Swell Direction NW
Height 1
Length 100
Comments 6.6 miles off South Soquel Pt - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.34 | 1.22 | 5.30 | 0.49 | | | | | | |
| 5 | | | | 1.45 | 4.91 | 10.80 | 0.85 | 2.11 | 0.20 | | | | |
| 10 | | | | 1.98 | 6.82 | 13.48 | 1.10 | 1.00 | 0.64 | | | | |
| 20 | | | | 1.86 | 10.74 | 20.96 | 1.56 | 1.45 | | | | | |
| 40 | | | | 2.84 | 18.80 | 25.32 | 1.86 | 1.25 | 0.79 | 77.4 | 7.3 | 10.68 | |
| 60 | | | | 2.04 | 25.29 | 36.97 | 2.25 | | | 66.3 | 1.3 | 49.83 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1115-1124
Water color (Forel) 11
(Munsell) 10GY 7/6

Station No. 12-3
Latitude 36°51.63' N
Longitude 121°57.44' W
Secchi Depth 4 m
Sonic Depth 118.9 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 300°
Air Temp (Dry Bulb) 12.22°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 13.2
Visibility 10

Clouds, Type strat/cum
Cloud Cover (%)
Swell Direction NW
Height 1
Length 100
Comments 5.6 miles South Soquel Pt - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .18 | .77 | 1.35 | .25 | 6.35 | 3.55 | 800.6 | 113. | 7.09 | |
| 5 | | | | .21 | .66 | 1.42 | .25 | 9.71 | 8.50 | 1073. | 95.8 | 11.20 | |
| 10 | | | | .21 | .64 | 3.03 | .34 | 10.89 | 3.15 | 787.6 | 129. | 6.11 | |
| 20 | | | | 2.15 | 13.60 | 20.92 | 1.41 | 0.94 | 1.02 | 96.1 | 11.7 | 8.21 | |
| 40 | | | | 1.97 | 20.17 | 27.97 | 1.81 | 0.42 | 0.35 | 67.4 | 5.1 | 13.24 | |
| 60 | | | | 1.72 | 25.45 | 35.03 | 2.13 | 0.84 | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1153-1208
Water color (Forel)
(Munsell) 5GY 7/6

Station No. 12-4
Latitude 36°52.60' N
Longitude 121°57.08' W
Secchi Depth 3 m
Sonic Depth 49.7 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 11.11°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 12.9
Visibility 10

Clouds, Type strat/cum
Cloud Cover (%) 10
Swell Direction NW
Height 1-2
Length 100
Comments 4.7 miles off South Soquel Pt - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.28 | 1.55 | 5.63 | .37 | 7.00 | 10.24 | 515.44 | 68.9 | 7.48 | |
| 5 | | | | .19 | 0.56 | ND | .29 | 23.19 | 14.27 | 708.53 | 120.0 | 5.90 | |
| 10 | | | | .22 | 3.71 | 8.48 | .55 | 19.92 | 8.42 | 603.68 | 121.2 | 4.98 | |
| 20 | | | | 2.55 | 16.60 | 24.49 | 1.48 | 6.71 | 4.22 | 293.71 | 49.4 | 5.95 | |
| 40 | | | | 2.18 | 21.74 | 32.35 | 1.80 | 2.31 | 0.79 | 165.09 | 23.0 | 7.19 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1220-1235
Water color (Forel)
(Munsell) 10Y 7/6

Station No. 12-5
Latitude 36°53.69' N
Longitude 121°56.55' W
Secchi Depth 3 m
Sonic Depth 28 m
Weather

Wind Speed 8-10 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 11.67°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 13.0
Visibility 10+

Clouds, Type strat/cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 3.7 miles South Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .19 | .78 | 3.01 | .26 | 1.95 | 1.70 | 939.0 | 120. | 7.80 | |
| 5 | | | | .21 | .48 | 2.92 | .22 | 10.65 | | 818.8 | 108. | 7.58 | |
| 10 | | | | .20 | .70 | 2.99 | .29 | 4.44 | 2.31 | 708.5 | 113. | 6.24 | |
| 20 | | | | 2.15 | 9.22 | 14.30 | 1.07 | 18.06 | 4.54 | 842.2 | 154. | 5.47 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1255-1317
Water color
(Forel) 11
(Munsell) 10GY 7/6

Station No. 12-6
Latitude 36°54.60' N
Longitude 121°56.07' W
Secchi Depth 4 m
Sonic Depth 24.7 m
Weather

Wind Speed 10-12 k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 11.67°C
Air Temp (Wet Bulb) 9.44°C
Surface Bucket Temp (°C) 13.3
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 3.1 miles SE Soquel Pt

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .17 | .61 | | .25 | 0.75 | 2.29 | 364.3 | 42.5 | 8.58 | |
| 5 | | | | .18 | .57 | | .23 | 2.91 | 2.11 | 698.9 | 84.3 | 8.29 | |
| 10 | | | | .23 | .61 | .85 | .26 | 8.50 | 5.59 | 690.1 | 95.3 | 7.24 | |
| 20 | | | | 2.29 | 14.74 | 20.09 | 1.58 | 2.40 | 0.94 | 430.2 | 55.3 | 7.78 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1330-1340
Water color
(Forel) 8
(Munsell) 5G 7/6

Station No. 12-7
Latitude 36°55.63' N
Longitude 121°55.68' W
Secchi Depth 7.5m
Sonic Depth 20.4m
Weather

Wind Speed 10-12 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 12.50°C
Air Temp (Wet Bulb) 10.00°C
Surface Bucket Temp (°C) 13.3
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 2.5 miles SE Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .23 | .73 | .80 | .32 | 2.36 | 0.92 | | | | |
| 5 | | | | .17 | .62 | .81 | .27 | 3.45 | 2.98 | | | | |
| 10 | | | | .21 | .58 | .28 | .35 | 1.34 | 0.87 | | | | |
| 15 | | | | 3.22 | 13.42 | 21.27 | 1.67 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1436-1443
Water color
(Forel) 11
(Munsell) 10GY 7/6

Station No. 12-8
Latitude 36°56.24' N
Longitude 121°55.54' W
Secchi Depth 5 m
Sonic Depth 16.8 m
Weather

Wind Speed 12-14 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 10.56°C
Surface Bucket Temp (°C) 13.3
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 2 miles off Soquel Cove Beach-Cement Boat Pier - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .34 | .53 | .17 | .27 | 0.51 | 0.75 | 541.84 | 51.48 | 10.53 | |
| 5 | | | | .27 | .42 | .35 | .23 | 3.01 | 0.93 | 709.41 | 68.85 | 10.30 | |
| 10 | | | | .21 | .59 | .53 | .31 | 1.39 | 4.37 | 394.28 | 65.29 | 6.04 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1500-1511
Water color (Forel) 11
(Munsell) 10GY 7/6

Station No. 12-9
Latitude 36°56.90' N
Longitude 121°55.49' W
Secchi Depth 5 m
Sonic Depth 14.6 m
Weather

Wind Speed 10-12 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 13.33°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 13.4
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 1.6 miles off Soquel Cove Beach-Concrete Ship Pier - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .18 | .49 | ND | .23 | 2.45 | 0.90 | 524.8 | 50.7 | 10.36 | |
| 5 | | | | .18 | .50 | .68 | .26 | 0.91 | 0.41 | 525.0 | 62.1 | 8.46 | |
| 10 | | | | 3.24 | 10.8 | 19.28 | 1.45 | 2.69 | | 78.0 | 4.5 | 17.17 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1530-1534
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 12-10
Latitude 36°57.21' N
Longitude 121°55.48' W
Secchi Depth 6 m
Sonic Depth 11.6 m
Weather

Wind Speed 10-12 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 13.61°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 13.6
Visibility 15+

Clouds, Type strat/cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 1.2 miles off Soquel Cove Beach - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .46 | .46 | 5.00 | .32 | 1.52 | 0.79 | 435.9 | 44.3 | 9.84 | |
| 5 | | | | .22 | .46 | 3.03 | .30 | 4.32 | | 551.7 | 60.0 | 9.20 | |
| 10 | | | | 4.74 | 11.32 | 20.93 | 1.58 | 5.21 | 1.56 | 1033. | 149. | 6.91 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/12/77
Time 1553-1604
Water color (Forel)
(Munsell) 5GY 7/6

Station No. 12-11
Latitude 36°56.62'N
Longitude 121°56.28'W
Secchi Depth 4m
Sonic Depth 16.8m
Weather

Wind Speed 12-14k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 13.33°C
Air Temp (Wet Bulb) 10.56°C
Surface Bucket Temp (°C) 13.1
Visibility 15+

Clouds, Type Strat/Cum
Cloud Cover (%) 15
Swell Direction NW
Height 1-2
Length 100
Comments 1.73 miles East Soquel Pt.- Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .24 | .42 | 1.05 | .22 | | | 616.1 | 64.4 | 9.56 | |
| 5 | | | | .19 | .27 | .75 | .23 | 5.08 | 2.81 | 313.2 | 39.5 | 7.93 | |
| 10 | | | | .21 | .27 | .88 | .26 | | | 775.3 | 96.9 | 8.00 | |
| 14 | | | | 3.45 | 12.27 | 24.63 | 1.60 | | | 650.6 | 90.1 | 7.22 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/13/77
Time 925-940
Water color (Forel) _____
(Munsell) 10Y 7/6

Station No. 13-1
Latitude 36°56.00'N
Longitude 122°00.48'W
Secchi Depth 2.5m
Sonic Depth 25m
Weather _____

Wind Speed 1-2k
Wind Direct. (True) 150°
Air Temp (Dry Bulb) 12.50°C
Air Temp (Wet Bulb) 9.72°C
Surface Bucket Temp (°C) 12.3
Visibility 8

Clouds, Type stratus
Cloud Cover (%) 10
Swell Direction NW
Height 2
Length _____
Comments 1.74 miles off Santa Cruz Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .22 | .33 | 3.25 | .30 | 6.24 | 5.46 | 905.8 | 157. | 5.78 | |
| 5 | | | | .27 | .69 | 7.97 | .31 | 5.40 | 0.42 | 583.8 | 119. | 4.93 | |
| 10 | | | | .24 | 3.88 | 11.38 | .58 | | | 463.0 | 75.4 | 6.14 | |
| 20 | | | | 1.89 | 15.38 | 25.20 | 1.56 | 1.45 | 0.52 | 154.0 | 17.9 | 8.59 | |
| 25 | | | | 1.39 | 18.54 | 29.27 | 1.98 | 1.01 | 0.22 | 124.7 | 5.1 | 24.50 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/13/77
Time 1012-1021
Water color (Forel) _____
(Munsell) 10Y 7/6

Station No. 13-2
Latitude 36°54.00'N
Longitude 122° 00.00'W
Secchi Depth 2.5m
Sonic Depth 105 m
Weather _____

Wind Speed 2k
Wind Direct. (True) 140°
Air Temp (Dry Bulb) 12.50°C
Air Temp (Wet Bulb) 10.00°C
Surface Bucket Temp (°C) 12.3
Visibility 10

Clouds, Type Strat
Cloud Cover (%) 60
Swell Direction NW
Height 2-3
Length 50
Comments Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .26 | .78 | 1.22 | .26 | | | 48.2 | 4.7 | 10.30 | |
| 5 | | | | .26 | .63 | 0.65 | .26 | | | | | | |
| 10 | | | | .23 | .57 | 1.63 | .27 | 23.22 | 11.92 | 884.5 | 198.1 | 4.47 | |
| 20 | | | | .78 | 7.59 | 14.64 | .75 | | | 425.7 | 78.4 | 5.43 | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/13/77
Time 1105-1120
Water color (Forel) 7
(Munsell) 5GY 7/6

Station No. 13-3
Latitude 36°51.00'N
Longitude 122°01.40'W
Secchi Depth 13m
Sonic Depth 74m
Weather _____

Wind Speed 16-18k
Wind Direct. (True) 310°
Air Temp (Dry Bulb) 11.67°C
Air Temp (Wet Bulb) 10.00°C
Surface Bucket Temp (°C) 12.1
Visibility 10

Clouds, Type Strat
Cloud Cover (%) 15
Swell Direction NW
Height 3-5
Length 50
Comments 6 miles S.Santa Cruz Pt - Overflight

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.18 | 2.72 | | .83 | 0.89 | 0.68 | 142.5 | 16.9 | 8.42 | |
| 5 | | | | 2.03 | 2.84 | 4.88 | .85 | 1.49 | | 213.1 | 15.4 | 13.83 | |
| 10 | | | | 2.20 | 3.59 | 5.69 | .88 | 1.31 | 0.25 | 151.2 | 12.8 | 11.77 | |
| 20 | | | | | 7.32 | 18.96 | 1.01 | | | 816.5 | 41.9 | 19.53 | |
| 40 | | | | 2.13 | 21.10 | 28.46 | 1.97 | 1.31 | | 133.1 | 11.7 | 11.38 | |
| 60 | | | | 1.91 | 27.51 | | 2.22 | | | | | | |

Cruise NASA 1
Vessel R/V ACANIA
Date 5/13/77
Time 1334-1350
Water color (Forel) 6
(Munsell) 10GY 7/6

Station No. 13-4
Latitude 36°37.80'N
Longitude 121°54.20'W
Secchi Depth 8m
Sonic Depth 30.5m
Weather

Wind Speed 8-10k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 12.78°C
Air Temp (Wet Bulb) 11.11°C
Surface Bucket Temp (°C) 12.0
Visibility 10

Clouds, Type Cum/Strat
Cloud Cover (%) 15
Swell Direction NW
Height 3-4
Length 50
Comments .25 miles N. Lovers Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .33 | 13.9 | 25.0 | 1.31 | 1.42 | 0.20 | 155.4 | 22.3 | 6.96 | |
| 5 | | | | .44 | 13.9 | 24.1 | 1.34 | | | 192.9 | 26.8 | 7.19 | |
| 10 | | | | .84 | 13.5 | 23.4 | 1.36 | | | 249.2 | 33.5 | 7.43 | |
| 20 | | | | | 21.2 | 28.3 | 1.73 | 1.73 | | 222.7 | 13.4 | 16.63 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 1215
Water color (Forel) 8
(Munsell) 5G 7/6

Station No. 6-2
Latitude 36°39.68' N
Longitude 121°57.10' W
Secchi Depth 6 m
Sonic Depth
Weather

Wind Speed 4-8 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 12.33°C
Air Temp (Wet Bulb) 11.67°C
Surface Bucket Temp (°C) 14.12
Visibility 0.25 mile

Clouds, Type low fog
Cloud Cover (%) 85
Swell Direction NW
Height 1-3
Length 100
Comments

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 1330
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 6-3
Latitude 36°40.90' N
Longitude 121°57.75' W
Secchi Depth 10
Sonic Depth
Weather

Wind Speed 4-6 k
Wind Direct. (True) 255°
Air Temp (Dry Bulb) 14.17°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 13.9
Visibility 0.25 mile

Clouds, Type low fog
Cloud Cover (%) 100
Swell Direction NW
Height 1-3
Length 100
Comments

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/6/77
Time 1435
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 6-4
Latitude 36°43.73' N
Longitude 121°58.28' W
Secchi Depth 16
Sonic Depth
Weather

Wind Speed 4-6 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C) 14.19
Visibility 0.5 mile

Clouds, Type fog
Cloud Cover (%) 95
Swell Direction NW
Height 1-3
Length 100
Comments

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/6/77
Time 1532
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 6-5
Latitude 36°46.80' N
Longitude 122°01.00' W
Secchi Depth 7 m
Sonic Depth
Weather

Wind Speed 4-8 k
Wind Direct. (True) 255°
Air Temp (Dry Bulb) 15.56°C
Air Temp (Wet Bulb) 13.89°C
Surface Bucket Temp (°C) 14.15
Visibility 5

Clouds, Type high fog
Cloud Cover (%) 50
Swell Direction NW
Height 1-3
Length 100
Comments

Unfiltered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.48 | 33.56 | 25.33 | .39 | 4.84 | | .83 | | | | | | |
| 50 | 10.80 | 33.71 | 25.82 | 2.31 | 18.3 | | 1.81 | | | | | | |
| 100 | | | | .15 | 26.4 | | 2.08 | | | | | | |
| 150 | | | | .19 | 28.8 | | 2.21 | | | | | | |
| 200 | | | | .14 | 30.8 | | 2.35 | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/6/77
Time 1532
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 6-5
Latitude 36°46.80' N
Longitude 122°01.00' W
Secchi Depth 7 m
Sonic Depth
Weather

Wind Speed 4-8 k
Wind Direct. (True) 255°
Air Temp (Dry Bulb) 15.56°C
Air Temp (Wet Bulb) 13.89°C
Surface Bucket Temp (°C) 14.15
Visibility 5

Clouds, Type high fog
Cloud Cover (%) 50
Swell Direction NW
Height 1-3
Length 100
Comments

Filtered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.48 | 33.56 | 25.33 | .71 | 5.39 | | 1.51 | | | | | | |
| 50 | 10.80 | 33.71 | 25.82 | 2.40 | 18.0 | | 2.09 | | | | | | |
| 100 | | | | .32 | 26.2 | | 2.30 | | | | | | |
| 150 | | | | .36 | 28.9 | | 2.44 | | | | | | |
| 200 | | | | .29 | 30.7 | | 2.43 | | | | | | |

| | | | |
|---|---|---|---|
| Cruise NASA 2 | Station No. 7-1 | Wind Speed 4-6 k | Clouds, Type fog |
| Vessel R/V ACANIA | Latitude 36°57.20' N | Wind Direct. (True) 180° | Cloud Cover (%) 100 |
| Date 9/7/77 | Longitude 121°55.30' W | Air Temp (Dry Bulb) 12.78°C | Swell Direction SW |
| Time 0830 | Secchi Depth 9 m | Air Temp (Wet Bulb) 11.94°C | Height 1 |
| Water color (Forel) 8 | Sonic Depth | Surface Bucket Temp (°C) | Length 50 |
| (Munsell) 5G 7/6 | Weather | Visibility 0.25 mile | Comments Soquel Cove |

**Data Suspect

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$** µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.27 | 33.69 | 24.41 | .51 | 1.29 | 3.37 | .69 | 7.44 | 1.86 | 258.71 | 45.1 | 5.74 | |
| 3 | 15.04 | 33.69 | 24.98 | .28 | .44 | 3.59 | .54 | 2.06 | 0.14 | 234.05 | 36.6 | 6.40 | |
| 8 | 14.30 | 33.68 | 25.13 | .19 | .42 | 2.64 | .47 | 1.64 | 0.82 | 327.12 | 39.2 | 8.34 | |
| | | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| Cruise NASA 2 | Station No. 7-2 | Wind Speed 2-4 k | Clouds, Type fog |
| Vessel R/V ACANIA | Latitude 36°56.25' N | Wind Direct. (True) 330° | Cloud Cover (%) 100 |
| Date 9/7/77 | Longitude 121°55.61' W | Air Temp (Dry Bulb) 12.78°C | Swell Direction calm |
| Time 0900 | Secchi Depth 7 m | Air Temp (Wet Bulb) 12.22°C | Height |
| Water color (Forel) 8 | Sonic Depth | Surface Bucket Temp (°C) | Length |
| (Munsell) 5G 7/6 | Weather | Visibility 0.25 mile | Comments |

**Data suspect

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$** µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.15 | 33.71 | 25.18 | .20 | .40 | 1.67 | .48 | 1.13 | 0.70 | 256.8 | 34.7 | 7.40 | |
| 3 | 13.93 | 33.79 | 25.21 | .18 | .32 | 1.41 | .43 | | | 392.3 | 60.1 | 6.52 | |
| 8 | 13.12 | 33.68 | 25.35 | .19 | .33 | 1.55 | .49 | 2.03 | 1.31 | 268.3 | 40.7 | 6.60 | |
| 13 | 12.75 | 33.73 | 25.48 | 2.09 | 2.23 | 1.63 | .87 | n.g. | n.g. | 472.4 | 83.6 | 5.65 | |

| | | | |
|---|---|---|---|
| Cruise NASA 2 | Station No. 7-3 | Wind Speed 2k | Clouds, Type fog |
| Vessel R/V ACANIA | Latitude 36°55.30' N | Wind Direct. (True) 190° | Cloud Cover (%) 100 |
| Date 9/7/77 | Longitude 121°56.40' W | Air Temp (Dry Bulb) 15.56°C | Swell Direction SW |
| Time AM | Secchi Depth 7 m | Air Temp (Wet Bulb) 13.33°C | Height 1-3 |
| Water color (Forel) 7 | Sonic Depth | Surface Bucket Temp (°C) | Length 100 |
| (Munsell) 5G 5/6 | Weather | Visibility 0.25 miles | Comments 2 miles Soquel Cove |

**Data suspect

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$** µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.68 | 33.74 | 25.10 | .32 | .57 | .47 | .34 | 1.31 | 0.68 | 161.9 | 19.7 | 8.22 | |
| 5 | 12.40 | 22.71 | 25.53 | .52 | .58 | .27 | .43 | 2.39 | 1.89 | 263.6 | 37.5 | 7.03 | |
| 10 | 12.10 | 33.71 | 25.59 | .43 | 1.48 | .48 | .52 | 1.08 | 0.30 | 882.9 | 148.6 | 5.94 | |
| 15 | 12.04 | 33.71 | 25.60 | 2.10 | 8.91 | 7.17 | 1.20 | 11.94 | 2.57 | 347.7 | 57.7 | 6.03 | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/7/77
Time PM
Water color
(Forel) 7
(Munsell) 5G 7/6

Station No. 7-4
Latitude 36°54.27' N
Longitude 121°56.70' W
Secchi Depth 8 m
Sonic Depth
Weather

Wind Speed 1-2 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 15.44°C
Air Temp (Wet Bulb) 13.33°C
Surface Bucket Temp (°C) 15.1
Visibility 0.25 mile

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction SW
Height 1-3
Length 100
Comments 3 miles out from Soquel Cove
No CTD cast

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .19 | .55 | | .47 | 1.50 | 0.81 | 209.5 | 27.6 | 7.59 | |
| 8 | | | | 1.11 | 3.97 | | .75 | 5.67 | 4.09 | 686.9 | 114.6 | 6.00 | |
| 13 | | | | 1.97 | 10.48 | | 1.25 | 3.72 | 2.96 | 258.6 | 45.5 | 5.69 | |
| 18 | | | | 2.62 | 12.12 | | 1.37 | 2.16 | 1.20 | 148.4 | 27.5 | 5.40 | |
| 23 | | | | 3.85 | 12.64 | | 1.58 | 1.63 | 0.13 | 156.5 | 21.5 | 7.30 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 0820
Water color
(Forel) 7
(Munsell) 5G 7/6

Station No. 8-1
Latitude 36°54.40' N
Longitude 121°57.17' W
Secchi Depth 8 m
Sonic Depth
Weather

Wind Speed 1-2 k
Wind Direct. (True) 150°
Air Temp (Dry Bulb) 13.33°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 14.8
Visibility 0.5 mile

Clouds, Type high fog
Cloud Cover (%) 100
Swell Direction 230°
Height 0-1
Length 100
Comments 3 miles from Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.59 | 33.72 | 25.09 | .41 | .63 | | .44 | 1.36 | 0.14 | 171.7 | 22.4 | 7.67 | |
| 8 | 14.58 | 33.73 | 25.11 | 1.30 | 3.51 | | .72 | 6.75 | 2.13 | 469.3 | 74.7 | 6.28 | |
| 13 | 12.50 | 33.71 | 25.51 | 1.90 | 9.25 | | 1.13 | 2.62 | 7.83 | 325.3 | 54.3 | 6.00 | |
| 18 | 11.81 | 33.71 | 25.64 | 2.95 | 12.64 | | 1.49 | 1.70 | 1.33 | 109.4 | 17.7 | 6.20 | |
| 23 | 11.56 | 33.72 | 25.70 | 2.91 | 12.67 | | 1.40 | 1.39 | 0.90 | 121.9 | 19.6 | 6.23 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 0912
Water color
(Forel) 7
(Munsell) 5G 5/6

Station No. 8-2
Latitude 36°53.4' N
Longitude 121°57.3' W
Secchi Depth 9 m
Sonic Depth 25.6 m
Weather

Wind Speed 0-1 k
Wind Direct. (True) 145°
Air Temp (Dry Bulb) 13.89°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 14.5
Visibility .5 mile

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 230°
Height 0-1
Length 100
Comments 4 miles from Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.24 | 33.70 | 25.15 | .25 | .82 | | .44 | 1.35 | 0.59 | | | | |
| 8 | 14.23 | 33.72 | 25.17 | .32 | .84 | | .48 | 1.54 | 0.55 | 239.2 | 33.4 | 7.17 | |
| 13 | 13.68 | 33.65 | 25.20 | .75 | 6.51 | | .88 | 8.13 | 3.77 | 316.3 | 47.3 | 6.69 | |
| 18 | 11.91 | 33.66 | 25.59 | 1.58 | 11.95 | | 1.22 | 5.04 | 2.07 | 216.0 | 37.4 | 5.80 | |
| 23 | 11.41 | 33.72 | 25.73 | 2.84 | 13.75 | | 1.56 | 2.08 | 2.01 | 92.2 | 15.6 | 5.93 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 1010
Water color (Forel) 6
(Munsell) 5G 5/6

Station No. 8-3
Latitude 36°52.0' N
Longitude 121°58.2' W
Secchi Depth 9 m
Sonic Depth 69.5 m
Weather

Wind Speed 0-1 k
Wind Direct. (True) 100°
Air Temp (Dry Bulb) 13.61°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 14.35
Visibility .5 mile

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 230°
Height 0-1
Length 100
Comments 5.2 miles off Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.05 | 33.65 | 25.17 | 1.26 | 2.70 | | 0.70 | 1.12 | 0.68 | 171.5 | 35.3 | 4.86 | |
| 15 | 13.87 | 33.62 | 25.17 | 2.66 | 12.90 | | 1.46 | 1.04 | 0.47 | 85.5 | 10.8 | 7.93 | |
| 40 | 12.49 | 33.64 | 25.47 | 1.34 | 18.13 | | 1.71 | 0.74 | 0.68 | 62.6 | 10.3 | 6.07 | |
| 55 | 11.29 | 33.68 | 25.72 | 1.66 | 20.53 | | 1.87 | 0.61 | | 70.4 | 10.0 | 7.08 | |
| 60 | 10.82 | 33.72 | 25.84 | 2.34 | 20.75 | | 1.92 | 0.52 | 0.33 | 56.5 | 8.5 | 6.66 | |
| 65 | 10.64 | 33.74 | 25.89 | 2.07 | 21.03 | | 1.94 | 0.48 | 0.52 | 85.2 | 10.3 | 8.26 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 1140
Water color (Forel) 6
(Munsell) 5G 5/6

Station No. 8-4
Latitude 36°50.5' N
Longitude 121°59.0' W
Secchi Depth 11.5 m
Sonic Depth 80 m
Weather

Wind Speed 1-2 k
Wind Direct. (True) 290°
Air Temp (Dry Bulb) 13.61°C
Air Temp (Wet Bulb) 12.50°C
Surface Bucket Temp (°C) 14.1
Visibility .5 mile

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 290°
Height 1-3
Length 75
Comments

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.79 | 33.61 | 25.22 | 1.00 | 4.06 | | | 0.79 | 0.28 | 161.9 | 22.3 | 7.27 | |
| 25 | 13.64 | 33.70 | 25.28 | 2.81 | 12.04 | | | 0.69 | 0.34 | 70.4 | 9.1 | 7.72 | |
| 50 | 12.88 | 33.69 | 25.42 | 2.91 | 16.12 | | | 0.55 | | 91.3 | 8.1 | 11.25 | |
| 65 | 11.90 | 33.65 | 25.58 | 0.30 | 21.66 | | | 0.41 | | 53.5 | 4.8 | 11.10 | |
| 70 | 10.56 | 33.68 | 25.84 | 0.41 | 22.14 | | | 0.39 | 0.03 | 109.4 | 10.7 | 10.24 | |
| 75 | 10.26 | 33.77 | 25.97 | 0.46 | 22.36 | | | 0.42 | | 36.2 | 4.1 | 8.87 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/8/77
Time 1300
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 8-5
Latitude 36°48.5' N
Longitude 122°00.2' W
Secchi Depth 11 m
Sonic Depth 385 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 13.89°C
Air Temp (Wet Bulb) 12.50°C
Surface Bucket Temp (°C) 13.84
Visibility .5 mile

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 300°
Height 3-4
Length 100
Comments 8 miles off Soquel Point

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.52 | 33.69 | 25.29 | 1.33 | 5.86 | | .82 | 0.33 | | 123.5 | 20.3 | 6.09 | |
| 50 | 13.18 | 33.70 | 25.37 | 1.84 | 15.88 | | 1.60 | 0.65 | | 68.5 | 8.9 | 7.74 | |
| 75 | 12.87 | 33.66 | 25.40 | 0.21 | 21.95 | | 1.84 | 0.57 | | 36.2 | 2.5 | 14.35 | |
| 90 | 12.23 | 33.62 | 25.49 | 0.09 | 22.89 | | 1.89 | 0.41 | | 39.8 | 3.6 | 10.99 | |
| 95 | 11.21 | 33.67 | 25.72 | 0.05 | 23.54 | | 1.94 | 0.40 | | 36.8 | 2.3 | 15.71 | |
| 100 | | | | 0.06 | 24.43 | | 2.00 | 0.44 | | 48.2 | 3.0 | 16.16 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 8-6 | Wind Speed | 4-6 k | Clouds, Type | high fog |
| Vessel | R/V ACANIA | Latitude | 36°46.5' N | Wind Direct. (True) | 270°W | Cloud Cover (%) | 100 |
| Date | 9/8/77 | Longitude | 122°01.2' W | Air Temp (Dry Bulb) | 13.89°C | Swell Direction | 270° |
| Time | 1400 | Secchi Depth | 11 m | Air Temp (Wet Bulb) | 12.78°C | Height | 2-4 |
| Water color (Forel) | 7 | Sonic Depth | 450 m | Surface Bucket Temp (°C) | 13.7 | Length | 100 |
| (Munsell) | 5G 5/6 | Weather | | Visibility | 2 | Comments | 11 miles from Soquel Point |

**Data suspect

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$** µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.39 | 33.64 | 25.31 | 1.33 | 4.99 | 3.82 | 1.00 | 1.25 | 0.86 | 152.3 | 22.4 | 6.81 | |
| 50 | 12.80 | 33.65 | 25.41 | 0.89 | 19.45 | 21.36 | 1.76 | 0.50 | 0.85 | 57.9 | 7.6 | 7.65 | |
| 75 | 12.49 | 33.60 | 25.43 | 0.70 | 22.50 | 22.30 | 1.87 | 0.23 | 0.24 | 37.3 | 3.7 | 10.04 | |
| 90 | 11.20 | 33.70 | 25.75 | 0.14 | 23.84 | 23.52 | 1.96 | 0.40 | 0.29 | 78.2 | 6.1 | 12.83 | |
| 95 | 10.75 | 33.70 | 25.83 | 0.16 | 23.91 | 24.07 | 1.97 | 0.42 | 0.22 | 40.1 | 4.4 | 11.50 | |
| 100 | | | | 0.10 | 23.95 | 24.32 | 2.00 | 0.25 | 0.35 | 36.5 | 3.9 | 9.4 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 9-1 | Wind Speed | 3-6 k | Clouds, Type | fog |
| Vessel | R/V ACANIA | Latitude | 36°46.8' N | Wind Direct. (True) | 20° | Cloud Cover (%) | 100 |
| Date | 9/9/77 | Longitude | 122°01.2' W | Air Temp (Dry Bulb) | 13.61°C | Swell Direction | |
| Time | 0805 | Secchi Depth | 13 m | Air Temp (Wet Bulb) | 12.78°C | Height | 3-4 |
| Water color (Forel) | 7 | Sonic Depth | 1000 m | Surface Bucket Temp (°C) | | Length | 100 |
| (Munsell) | 5G 5/6 | Weather | | Visibility | 1 | Comments | Calcol. STA 3 |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.32 | 33.64 | 25.29 | | | | | 1.06 | 0.12 | 126.5 | 24.0 | 5.28 | |
| 50 | 13.27 | 33.63 | 25.30 | | | | | 0.62 | | 61.3 | 5.1 | 12.03 | |
| 75 | 13.25 | 33.63 | 25.30 | | | | | 0.72 | | 178.0 | 23.9 | 7.46 | |
| 90 | 12.43 | 33.65 | 25.46 | | | | | 0.44 | | 32.9 | 2.8 | 11.74 | |
| 95 | 10.99 | 33.72 | 25.81 | | | | | 0.60 | | 37.6 | 3.5 | 10.64 | |
| 100 | | | | | | | | 0.52 | | 39.8 | 2.1 | 19.29 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 9-2 | Wind Speed | 3-6 k | Clouds, Type | fog |
| Vessel | R/V ACANIA | Latitude | 36°48.5' N | Wind Direct. (True) | 20° | Cloud Cover (%) | 100 |
| Date | 9/9/77 | Longitude | 122°00.1' W | Air Temp (Dry Bulb) | 13.61°C | Swell Direction | 310°NW |
| Time | 1025 | Secchi Depth | 11 m | Air Temp (Wet Bulb) | 12.22°C | Height | 1-3 |
| Water color (Forel) | 7 | Sonic Depth | 417 m | Surface Bucket Temp (°C) | 13.65 | Length | 100 |
| (Munsell) | 5G 5/6 | Weather | | Visibility | 1 | Comments | 9 miles out from ML |

Unfiltered

**Data suspect

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$** µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.39 | 33.66 | 25.30 | 1.39 | 3.78 | | 0.79 | 1.60 | 0.38 | 163.5 | 28.5 | 5.73 | |
| 50 | 13.23 | 33.66 | 25.33 | 1.30 | 18.74 | | 1.74 | 0.99 | | 62.1 | 4.9 | 12.65 | |
| 75 | 12.81 | 33.67 | 25.42 | 0.90 | 20.38 | | 1.80 | 0.51 | | 40.7 | 3.9 | 10.42 | |
| 90 | 12.15 | 33.74 | 25.60 | 0.20 | 23.76 | | 1.90 | 0.22 | 0.29 | 39.5 | 3.2 | 12.49 | |
| 95 | 10.92 | 33.72 | 25.81 | 0.39 | 23.87 | | 2.00 | 0.31 | 0.01 | 51.0 | 2.9 | 17.62 | |
| 100 | | | | 0.20 | 25.00 | | 2.06 | 0.43 | | 39.8 | 4.8 | 8.27 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1025
Water color (Forel) 7
(Munsell) 5G 5/6

Station No. 9-2
Latitude 36°48.5' N
Longitude 122°00.1' W
Secchi Depth 11 m
Sonic Depth 417 m
Weather

Wind Speed 3-6 k
Wind Direct. (True) 20°
Air Temp (Dry Bulb) 13.61°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 13.65
Visibility 1

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 310°NW
Height 1-3
Length 100
Comments 9 miles out from ML

Filtered **Suspect data

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$** µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.39 | 33.66 | 25.30 | 1.22 | 4.29 | .56 | 0.75 | | | 163.5 | 28.5 | 5.73 | |
| 50 | 13.23 | 33.66 | 25.33 | 1.33 | 18.11 | 20.05 | 1.70 | | | 62.1 | 4.9 | 12.65 | |
| 75 | 12.81 | 33.67 | 25.42 | 0.98 | 20.32 | 20.86 | 1.72 | | | 40.7 | 3.9 | 10.43 | |
| 90 | 12.15 | 33.74 | 25.60 | 0.37 | 23.50 | 23.66 | 1.89 | | | 39.5 | 3.2 | 12.49 | |
| 95 | 10.92 | 33.72 | 25.81 | 0.37 | 23.75 | 27.02 | 1.96 | | | 51.0 | 2.8 | 17.63 | |
| 100 | | | | 0.27 | 24.62 | 26.21 | 2.00 | | | 39.8 | 4.8 | 8.27 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1110
Water color (Forel) 6
(Munsell) 5G 5/6

Station No. 9-3
Latitude 36°50.31' N
Longitude 121°58.60' W
Secchi Depth 11 m
Sonic Depth 87.8 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 270° W
Air Temp (Dry Bulb) 13.33°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 14.18
Visibility 1

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 270°W
Height 2-4
Length 100
Comments 7 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.73 | 33.71 | 25.27 | 1.67 | 4.44 | 1.91 | .86 | 0.60 | | 141.5 | 21.0 | 6.76 | |
| 5 | 12.93 | 33.67 | 25.40 | 1.64 | 5.92 | 2.39 | .99 | 0.90 | | 109.5 | 13.6 | 8.05 | |
| 10 | 12.54 | 33.71 | 25.50 | 2.56 | 8.26 | 5.22 | 1.17 | 0.75 | 0.12 | 96.6 | 16.1 | 6.01 | |
| 25 | 11.81 | 33.70 | 25.64 | 3.22 | 12.34 | 3.89 | 1.45 | 0.68 | | 39.4 | 5.7 | 6.97 | |
| 50 | 10.91 | 33.65 | 25.76 | 1.34 | 20.00 | 8.93 | 1.83 | 0.20 | 0.28 | 31.5 | 4.7 | 6.73 | |
| 85 | 10.22 | 33.76 | 25.97 | 0.23 | 27.18 | 14.75 | 1.97 | 0.30 | n.g. | 25.9 | 2.4 | 10.65 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1235
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 9-4
Latitude 36°52.2'N
Longitude 121°58.2' W
Secchi Depth 8 m
Sonic Depth
Weather

Wind Speed 2-4 k
Wind Direct. (True) 290°
Air Temp (Dry Bulb) 13.33°C
Air Temp (Wet Bulb) 11.94°C
Surface Bucket Temp (°C) 14.65
Visibility fog

Clouds, Type fog
Cloud Cover (%) 100
Swell Direction 280°
Height 1-3
Length 100
Comments 6 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.39 | 33.74 | 25.15 | | | | | 0.97 | 0.31 | 259.7 | 30.7 | 8.47 | |
| 5 | 14.07 | 33.67 | 25.17 | | | | | 1.38 | 1.31 | 339.2 | 47.9 | 7.08 | |
| 10 | 12.77 | 33.61 | 25.38 | | | | | 0.74 | | 136.6 | 24.8 | 5.52 | |
| 15 | 11.61 | 33.72 | 25.69 | | | | | 1.06 | 0.24 | 58.7 | 8.4 | 7.04 | |
| 25 | 11.25 | 33.74 | 25.76 | | | | | 0.54 | 0.05 | 62.1 | 7.8 | 8.01 | |
| 55 | 10.79 | 33.76 | 25.88 | | | | | 0.54 | 0.18 | 51.0 | 7.6 | 6.73 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1415
Water color (Forel) 6
(Munsell) 5G 5/6

Station No. 9-5
Latitude 36°53.4' N
Longitude 121°57.4' W
Secchi Depth 10 m
Sonic Depth 31.1 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 270°W
Air Temp (Dry Bulb) 15.00°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C)
Visibility 2

Clouds, Type low stratus
Cloud Cover (%) 100
Swell Direction 270°W
Height 1-3
Length 100
Comments 4 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.05 | 33.73 | 25.01 | .84 | .98 | | .59 | 0.46 | | 124.9 | 15.6 | 8.02 | Lab data |
| 5 | 13.80 | 33.71 | 25.25 | 1.11 | .88 | | .55 | 0.67 | | 156.0 | 27.3 | 5.72 | |
| 10 | 12.52 | 33.68 | 25.48 | 1.84 | 7.58 | | 1.02 | 2.31 | 0.20 | 183.1 | 33.7 | 5.44 | |
| 15 | 11.92 | 33.72 | 25.63 | 2.52 | 11.42 | | 1.34 | 1.62 | 1.11 | 118.9 | 21.3 | 5.58 | |
| 25 | 11.41 | 33.72 | 25.73 | 4.23 | 14.77 | | 1.77 | 0.95 | 0.50 | 82.6 | 13.3 | 6.21 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1445
Water color (Forel) 6
(Munsell) 10 G

Station No. 9-6
Latitude 36°54.5' N
Longitude 121°56.9' W
Secchi Depth 10.5 m
Sonic Depth 21.9 m
Weather

Wind Speed 6-10 k
Wind Direct. (True) 280°
~~Air Temp (Dry~~ Bulb) 14.17°C
Air Temp (Wet Bulb) 12.50°C
Surface Bucket Temp (°C) 15.5
Visibility

Clouds, Type low stratus
Cloud Cover (%) 100
Swell Direction NW
Height 1-3
Length 75
Comments 3 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.23 | 33.72 | 24.96 | 1.44 | 1.64 | | .71 | 0.38 | | 109.7 | 15.4 | 7.12 | |
| 5 | 14.88 | 33.68 | 25.04 | 1.48 | 1.57 | | .67 | 0.58 | 0.03 | 126.2 | 19.9 | 6.36 | |
| 10 | 13.33 | 33.67 | 25.32 | 0.87 | 1.28 | | .67 | 1.17 | 0.66 | 358.0 | 57.3 | 6.25 | |
| 15 | 12.71 | 33.72 | 25.48 | 1.04 | 3.86 | | .90 | 5.45 | 4.84 | 723.2 | 124.1 | 4.83 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1525
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 9-7
Latitude 36°55.2' N
Longitude 121°56.3' W
Secchi Depth 11.5 m
Sonic Depth 18 m
Weather

Wind Speed 5-6 k
Wind Direct. (True) 270°W
Air Temp (Dry Bulb) 15.00°C
Air Temp (Wet Bulb) 13.00°C
Surface Bucket Temp (°C) 15.7
Visibility 2.5

Clouds, Type low stratus
Cloud Cover (%) 75
Swell Direction 270°W
Height 1-3
Length 75
Comments 2.5 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.40 | 33.72 | 24.92 | 1.00 | 1.01 | | .64 | 1.36 | 1.22 | 191.6 | 30.7 | 6.25 | Field data |
| 5 | 15.32 | 33.74 | 24.95 | .97 | .93 | | .62 | 1.71 | 1.32 | 181.6 | 29.1 | 6.24 | |
| 10 | 13.60 | 33.73 | 25.31 | 1.00 | 1.04 | | .61 | 0.20 | 0.44 | 434.2 | 95.1 | 4.56 | |
| 16 | 12.83 | 33.72 | 25.45 | 3.41 | 7.52 | | 1.30 | 1.99 | 1.62 | 346.0 | 55.6 | 6.23 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1610
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 9-8
Latitude 36°56.3' N
Longitude 121°55.8' W
Secchi Depth 11 m
Sonic Depth 12.8 m
Weather

Wind Speed 6-8 k
Wind Direct. (True) 240°W
Air Temp (Dry Bulb) 14.44°C
Air Temp (Wet Bulb) 13.00°C
Surface Bucket Temp (°C) 15.95
Visibility 5

Clouds, Type stratus
Cloud Cover (%) 75
Swell Direction 270°W
Height 1-3
Length 75
Comments 2.5 miles from Soquel Pt.

field

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.63 | 33.72 | 24.86 | .85 | .55 | 0.81 | .50 | 0.52 | 0.45 | 133.6 | 18.4 | 7.26 | |
| 5 | 15.54 | 33.71 | 24.87 | .90 | .50 | 1.04 | .55 | 0.39 | 0.09 | 146.6 | 18.4 | 7.96 | |
| 10 | 14.19 | 33.61 | 25.14 | 1.84 | 3.00 | 4.44 | .89 | 0.89 | 0.13 | 165.8 | 26.1 | 6.36 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/9/77
Time 1655
Water color (Forel) 7
(Munsell) 10G 7/6

Station No. 9-9
Latitude 36°57.2' N
Longitude 121°55.3' W
Secchi Depth 10.5 m
Sonic Depth 12.6 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 230°SW
Air Temp (Dry Bulb) 14.72°C
Air Temp (Wet Bulb) 13.06°C
Surface Bucket Temp (°C) 16.0
Visibility 5

Clouds, Type stratus
Cloud Cover (%) 85
Swell Direction
Height
Length
Comments 2.9 miles off Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.75 | 33.74 | 24.85 | .65 | .66 | 2.63 | .43 | 0.79 | | 201.4 | 34.5 | 5.84 | |
| 5 | 15.60 | 33.75 | 24.87 | .78 | .63 | 1.75 | .43 | 0.68 | 0.28 | 234.0 | 33.9 | 6.91 | |
| 8 | 14.25 | 33.63 | 25.10 | 1.27 | .63 | 2.67 | .65 | 0.71 | 0.30 | 201.8 | 29.0 | 6.96 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 0835
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 10-1
Latitude 36°57.2' N
Longitude 121°55.3' W
Secchi Depth 14.5 m
Sonic Depth 11.0 m
Weather

Wind Speed 0-1
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 15.00°C
Air Temp (Wet Bulb) 12.22°C
Surface Bucket Temp (°C) 15.0
Visibility 1-3

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 250°
Height 1-2
Length 40
Comments 1 mile off Sea Cliff

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 0910
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 10-2
Latitude 36°56.09' N
Longitude 121°55.92' W
Secchi Depth 13 m
Sonic Depth 16.8 m
Weather

Wind Speed 0
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 15.83°C
Air Temp (Wet Bulb) 12.73°C
Surface Bucket Temp (°C) 14.7
Visibility 1-3

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 260°
Height 1
Length 50
Comments 2 miles off Sea Cliff

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 0933
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 10-3
Latitude 36°55.37' N
Longitude 121°56.34' W
Secchi Depth 10.5 m
Sonic Depth 23 m
Weather

Wind Speed 0-1
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 12.33°C
Surface Bucket Temp (°C)
Visibility 1-3

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 260°
Height 1
Length 50
Comments 3 miles from Sea Cliff

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1000
Water color (Forel) 6
(Munsell) 5G 7/6

Station No. 10-4
Latitude 36°54.53' N
Longitude 121°57.14' W
Secchi Depth 13 m
Sonic Depth 28.7 m
Weather

Wind Speed 0-1 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 12.33°C
Surface Bucket Temp (°C) 15.0
Visibility 1-3

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 270°
Height 1-2
Length 50
Comments 3 miles from Soquel Pt

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1025
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 10-5
Latitude 36°53.4' N
Longitude 121°57.5' W
Secchi Depth 11 m
Sonic Depth 25.6 m
Weather

Wind Speed 0
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 16.78°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C) 15.15
Visibility 1-3

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 280°
Height 1
Length 50
Comments 3.8 miles from Soquel Pt

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1100
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 10-6
Latitude 36°51.94' N
Longitude 121°58.00' W
Secchi Depth 9 m
Sonic Depth 64 m
Weather

Wind Speed 0
Wind Direct. (True) calm
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 13.11°C
Surface Bucket Temp (°C) 15.15
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 250°
Height 1
Length 50
Comments 6.5 miles from Sea Cliff

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1200
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 10-7
Latitude 36°50.06' N
Longitude 121°59.18' W
Secchi Depth 13 m
Sonic Depth 78.6 m
Weather

Wind Speed 0-1 k
Wind Direct. (True) 280°
Air Temp (Dry Bulb) 16.22°C
Air Temp (Wet Bulb) 13.39°C
Surface Bucket Temp (°C) 14.1
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 270°
Height 2-3
Length 50
Comments 7 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1230
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 10-8
Latitude 36°48.62' N
Longitude 121°57.70' W
Secchi Depth 17 m
Sonic Depth 76.8 m
Weather

Wind Speed 1-2 k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 13.89°C
Surface Bucket Temp (°C) 13.8
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 260°
Height 2-3
Length 50
Comments 8 miles from Red Hill

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1325
Water color (Forel) 6
(Munsell) 5BG 7/6

Station No. 10-9
Latitude 36°50.06' N
Longitude 121°55.72' W
Secchi Depth 12 m
Sonic Depth 65.8 m
Weather

Wind Speed 1-2 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 15.44°C
Air Temp (Wet Bulb) 12.89°C
Surface Bucket Temp (°C) 14.85
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 97
Swell Direction 270°
Height 1-2
Length 40
Comments 6 miles from Red Hill

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1350
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 10-10
Latitude 36°51.24' N
Longitude 121°53.80' W
Secchi Depth 14 m
Sonic Depth 43.9 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 12.89°C
Surface Bucket Temp (°C) 15.10
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 97
Swell Direction 270°
Height 1-2
Length 20
Comments 4 miles from Red Hill

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1415
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 10-11
Latitude 36°51.7' N
Longitude 121°52.8' W
Secchi Depth 13 m
Sonic Depth 36.6 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 15.72°C
Air Temp (Wet Bulb) 13.06°C
Surface Bucket Temp (°C)
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 97
Swell Direction 270°
Height 1-2
Length 20
Comments 3 miles from Red Hill

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1435
Water color (Forel) 6
(Munsell) 5BG 7/6

Station No. 10-12
Latitude 36°52.7' N
Longitude 121°52.0' W
Secchi Depth 12 m
Sonic Depth 22.9 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 15.83°C
Air Temp (Wet Bulb) 13.28°C
Surface Bucket Temp (°C) 15.20
Visibility 1-6

Clouds, Type stratus
Cloud Cover (%) 90
Swell Direction 270°
Height 7
Length 20
Comments 2 miles from Red Hill

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1455
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 10-13
Latitude 36°52.8' N
Longitude 121°51.0' W
Secchi Depth 14 m
Sonic Depth 15.2 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 16.11°C
Air Temp (Wet Bulb) 13.39°C
Surface Bucket Temp (°C) 15.20
Visibility 1-6

Clouds, Type stratus
Cloud Cover (%) 90
Swell Direction 270°
Height 1-2
Length 10
Comments 1 mile from Red Hill

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1605
Water color (Forel) 6
(Munsell) 5G 7/8

Station No. 10-14
Latitude 36°51.4' N
Longitude 122°01.0' W
Secchi Depth 12 m
Sonic Depth 65.8 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 15.33°C
Air Temp (Wet Bulb) 13.06°C
Surface Bucket Temp (°C) 14.0
Visibility 0-5

Clouds, Type stratus
Cloud Cover (%) 97
Swell Direction 270°
Height 1-2
Length 50
Comments 5.6 miles from Santa Cruz

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1650
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 10-15
Latitude 36°53.5' N
Longitude 122°01.0' W
Secchi Depth 16 m
Sonic Depth 36.6 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 13.06°C
Surface Bucket Temp (°C) 15.7
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 70
Swell Direction 270°
Height 1
Length 50
Comments 3.28 miles from Santa Cruz Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1700
Water color (Forel) 6
(Munsell) 5G 7/6

Station No. 10-16
Latitude 36°54.6' N
Longitude 122°01.0' W
Secchi Depth 13 m
Sonic Depth 31.1 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 15.83°C
Air Temp (Wet Bulb) 13.33°C
Surface Bucket Temp (°C) 16.0
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 60
Swell Direction 250°
Height 0-1
Length 50
Comments 2.34 miles from Santa Cruz Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1720
Water color (Forel) 7
(Munsell) 5G 7/C

Station No. 10-17
Latitude 36°55.5' N
Longitude 122°01.1' W
Secchi Depth 12 m
Sonic Depth 20.1 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 13.56°C
Surface Bucket Temp (°C) 15.95
Visibility 1-6

Clouds, Type stratus
Cloud Cover (%) 40
Swell Direction 260°
Height 0-1
Length 10
Comments 1.5 miles from Santa Cruz Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/10/77
Time 1740
Water color (Forel) 7
(Munsell) 5G 7/6

Station No. 10-18
Latitude 36°56.5' N
Longitude 122°00.97' W
Secchi Depth 9 m
Sonic Depth 15.5 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C) 16.0
Visibility 1-6

Clouds, Type stratus
Cloud Cover (%) 40
Swell Direction 260°
Height 1
Length 20
Comments 0.8 miles from Santa Cruz Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/11/77
Time 0835
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 11-1
Latitude 36°58.2' N
Longitude 121°55.2' W
Secchi Depth 13 m
Sonic Depth 13.4 m
Weather

Wind Speed 0-2 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 15.78°C
Air Temp (Wet Bulb) 12.56°C
Surface Bucket Temp (°C) 15.35
Visibility 1-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 250°
Height 0-1
Length 10
Comments 1.0 mile from Concrete Ship

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.06 | 33.73 | 25.00 | 2.42 | 1.70 | 2.94 | .73 | 0.37 | 0.09 | 136.0 | 20.0 | 6.82 | 1.33 |
| 5 | 14.80 | 33.78 | 25.09 | 2.66 | 1.79 | 2.85 | .74 | 0.46 | | 107.6 | 18.2 | 5.92 | 1.47 |
| 8 | 14.70 | 33.72 | 25.08 | 2.06 | 1.81 | 2.76 | .71 | 0.12 | 0.28 | 93.3 | 13.0 | 7.20 | 1.07 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 11-2 | Wind Speed | 0-2 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°56.2' N | Wind Direct. (True) | 245° | Cloud Cover (%) | 100 |
| Date | 9/11/77 | Longitude | 121°55.8' W | Air Temp (Dry Bulb) | 15.89°C | Swell Direction | 245° |
| Time | 0915 | Secchi Depth | 15 m | Air Temp (Wet Bulb) | 12.50°C | Height | 0-1 |
| Water color (Forel) | 5 | Sonic Depth | 19 m | Surface Bucket Temp (°C) | 14.9 | Length | 10 |
| (Munsell) | 10G 7/6 | Weather | | Visibility | 1-5 | Comments | 2.2 miles from Concrete Boat |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.65 | 33.71 | 25.08 | 1.44 | 1.87 | 1.62 | .65 | 0.39 | | 92.7 | 12.8 | 7.26 | 1.25 |
| 5 | 14.60 | 33.70 | 25.08 | 1.56 | 1.91 | 1.79 | .65 | 0.49 | | 109.4 | 16.7 | 6.54 | 1.12 |
| 10 | 13.37 | 33.70 | 25.33 | 2.69 | 4.75 | 4.00 | .92 | 0.35 | 0.48 | 146.2 | 28.8 | 5.08 | 1.11 |
| 15 | 13.02 | 33.77 | 25.45 | 3.13 | 6.43 | 5.47 | 1.08 | 0.37 | 0.46 | 151.7 | 28.3 | 5.37 | 1.92 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 11-3 | Wind Speed | 2-4 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°43.0' N | Wind Direct. (True) | 220° | Cloud Cover (%) | 100 |
| Date | 9/11/77 | Longitude | 122°13.48' W | Air Temp (Dry Bulb) | 14.72°C | Swell Direction | 270° |
| Time | 1220 | Secchi Depth | 16 m | Air Temp (Wet Bulb) | 12.50°C | Height | 1-3 |
| Water color (Forel) | 6 | Sonic Depth | | Surface Bucket Temp (°C) | 14.0 | Length | |
| (Munsell) | 10G 7/6 | Weather | | Visibility | 1-5 | Comments | 20 miles W Soquel Cove |

Unfiltered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.77 | 33.61 | 25.18 | 1.30 | 4.61 | 8.28 | .84 | 0.68 | | 50.9 | 12.3 | 4.14 | |
| 50 | 10.82 | 33.75 | 25.85 | 1.60 | 23.38 | 18.98 | 1.89 | 0.41 | | 46.8 | 6.7 | 7.03 | |
| 100 | | | | .16 | 32.24 | 27.48 | 2.16 | 0.16 | 0.02 | 44.3 | 3.6 | 12.23 | |
| 250 | | | | .07 | 39.94 | 45.64 | 2.64 | 0.26 | | 64.9 | 3.3 | 19.65 | |
| 500 | | | | .09 | 49.36 | 75.36 | 3.22 | 0.21 | | 67.8 | 2.1 | 32.85 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 11-3 | Wind Speed | 2-4 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°43.0' N | Wind Direct. (True) | 220° | Cloud Cover (%) | 100 |
| Date | 9/11/77 | Longitude | 122°13.48' W | Air Temp (Dry Bulb) | 14.72°C | Swell Direction | 270° |
| Time | 1415 | Secchi Depth | 16 m | Air Temp (Wet Bulb) | 12.50°C | Height | 1-3 |
| Water color (Forel) | 6 | Sonic Depth | | Surface Bucket Temp (°C) | 14.0 | Length | |
| (Munsell) | 10G 7/6 | Weather | | Visibility | | Comments | 20 miles W Soquel Cove |

Filtered

missing: --------

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.77 | 33.61 | 25.18 | 1.29 | 3.76 | 5.15 | .91 | | | 50.9 | 12.3 | 4.14 | 0.82 |
| 50 | 10.82 | 33.75 | 25.85 | 1.73 | 17.92 | 15.68 | 1.81 | | | 46.8 | 6.7 | 7.03 | 1.01 |
| 100 | | | | 0.25 | 21.77 | 20.14 | 2.03 | | | 44.3 | 3.6 | 12.23 | 0.36 |
| 250 | | | | 0.26 | 35.03 | 44.23 | 2.62 | | | 64.9 | 3.3 | 19.65 | ---- |
| 500 | | | | 0.17 | 44.02 | 73.21 | 3.22 | | | 67.8 | 2.1 | 32.85 | 0.77 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/11/77
Time 1415
Water color (Forel) 6
(Munsell) 5G 7/6

Station No. 11-4
Latitude 36°36.2' N
Longitude 122°22.3' W
Secchi Depth 15 m
Sonic Depth
Weather

Wind Speed 4-6 k
Wind Direct. (True) 190°
Air Temp (Dry Bulb) 15.56°C
Air Temp (Wet Bulb) 13.33°C
Surface Bucket Temp (°C) 15.0
Visibility 5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 270°
Height 1-3
Length
Comments 30 miles out from Soquel

Unfiltered

*not detected

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.77 | 33.65 | 25.00 | .59 | 1.10 | | .63 | 0.16 | ND* | 279.5 | 9.61 | 29.10 | |
| 50 | 11.15 | 33.77 | 25.81 | 1.50 | 20.99 | | 1.68 | 0.35 | | 28.3 | 3.17 | 8.93 | |
| 100 | | | | .13 | 31.92 | | 2.08 | 0.20 | ND* | 27.8 | 1.84 | 15.18 | |
| 250 | | | | .14 | 41.62 | | 2.79 | 0.16 | 0.22 | 18.9 | 0.14 | 137.7 | |
| 500 | | | | .18 | 50.58 | | 3.27 | 0.29 | ND* | 12.8 | 0.46 | 27.93 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/11/77
Time 1415
Water color (Forel) 6
(Munsell) 5G 7/6

Station No. 11-4
Latitude 36° 36.2' N
Longitude 122°22.3' W
Secchi Depth 15m
Sonic Depth
Weather

Wind Speed 4-6k
Wind Direct. (True) 190°
Air Temp (Dry Bulb) 15.56°C
Air Temp (Wet Bulb) 13.33°C
Surface Bucket Temp (°C) 15.0
Visibility 5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 270°
Height 1-3
Length
Comments 30 miles out Soquel

Filtered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.77 | 33.65 | 25.00 | .69 | 1.37 | 1.32 | .61 | | | 279.5 | 9.6 | 29.10 | 0.76 |
| 50 | 11.15 | 33.77 | 25.81 | 1.57 | 18.70 | 17.32 | 1.67 | | | 28.3 | 3.2 | 8.93 | 0.92 |
| 100 | | | | 0.16 | 23.29 | 16.25 | 2.13 | | | 27.8 | 1.8 | 15.18 | 0.42 |
| 250 | | | | 0.40 | 31.11 | 29.66 | 2.80 | | | 18.9 | 0.1 | 137.7 | 0.42 |
| 500 | | | | 0.37 | 45.05 | 74.84 | 3.33 | | | 12.8 | 0.5 | 27.9 | 0.70 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/11/77
Time 1610
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 11.5
Latitude 36°37.51' N
Longitude 122°09.77' W
Secchi Depth 16m
Sonic Depth
Weather

Wind Speed 4-6k
Wind Direct. (True) 230°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 13.06°C
Surface Bucket Temp (°C) 14.4
Visibility 1-5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 230°
Height 1-3
Length
Comments 20 Miles from Point Piños

Unfiltered

* not detected

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.18 | 33.59 | 25.08 | 1.47 | 3.63 | | .82 | 0.28 | 0.04 | 80.6 | 9.12 | 8.84 | |
| 50 | 10.52 | 33.66 | 25.84 | 1.19 | 25.21 | | 1.76 | 0.22 | ND* | 28.7 | 1.93 | 14.89 | |
| 100 | | | | 0.08 | 32.42 | | 2.17 | 0.17 | ND* | 16.7 | 1.15 | 14.87 | |
| 250 | | | | 0.13 | 36.00 | | 2.24 | 0.16 | ND* | 20.0 | 0.73 | 27.32 | |
| 500 | | | | 0.11 | 48.81 | | 3.02 | 0.10 | 0.01 | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/11/77
Time 1610
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 11-5
Latitude 36°37.51'N
Longitude 122°09.77'W
Secchi Depth 16m
Sonic Depth
Weather

Wind Speed 4-6k
Wind Direct. (True) 230°
Air Temp (Dry Bulb) 15.28°C
Air Temp (Wet Bulb) 13.06°C
Surface Bucket Temp (°C) 14.4
Visibility 1-5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 230°
Height 1-3
Length
Comments 20 miles from Pt Piños

Filtered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.18 | 33.59 | 25.08 | 1.60 | 3.42 | 2.39 | .93 | | | 80.6 | 9.12 | 8.84 | 1.09 |
| 50 | 10.52 | 33.66 | 25.84 | 1.27 | 22.36 | 19.27 | 1.50 | | | 28.7 | 1.93 | 14.89 | 6.72 |
| 100 | | | | .23 | 27.90 | 26.18 | 2.06 | | | 16.7 | 1.15 | 14.57 | |
| 250 | | | | .18 | 31.02 | 31.68 | 2.34 | | | 20.0 | 0.73 | 27.32 | 0.71 |
| 500 | | | | .16 | 35.62 | 38.50 | 3.04 | | | | | | 1.12 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 0845
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 12-1
Latitude 36°46.96'N
Longitude 122°01.90'W
Secchi Depth 12m
Sonic Depth
Weather

Wind Speed 1-2k
Wind Direct. (True) 130°
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 14.17°C
Surface Bucket Temp (°C) 14.8
Visibility 1-5

Clouds, Type Stra-
Cloud Cover (%) 100
Swell Direction 310°
Height 3-5
Length
Comments 11 miles from Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | .66 | 4.80 | | .84 | 0.48 | 0.30 | 116.8 | 17.8 | 6.55 | |
| 5 | 13.44 | 33.66 | 25.29 | .72 | 5.28 | | .84 | 0.35 | 0.45 | 86.9 | 14.3 | 6.09 | |
| 10 | 12.96 | 33.66 | 25.39 | 1.08 | 5.16 | | .96 | 0.18 | 0.55 | 84.2 | 13.2 | 6.37 | |
| 25 | 11.65 | 33.71 | 25.68 | 1.54 | 9.03 | | 1.25 | 0.41 | 0.30 | 59.9 | 8.6 | 6.94 | |
| 50 | 11.26 | 33.72 | 25.76 | 1.64 | 16.31 | | 1.51 | 0.29 | 0.48 | 21.0 | 2.8 | 7.39 | |
| 100 | | | | -.15 | 24.42 | | 1.79 | 0.45 | -0.07 | 18.4 | 0.9 | 20.04 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 0945
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 12-2
Latitude 36°43.3'N
Longitude 122°00.2'W
Secchi Depth 12m
Sonic Depth 318.4 m
Weather

Wind Speed 2-4k
Wind Direct. (True) 150°
Air Temp (Dry Bulb) 16.28°C
Air Temp (Wet Bulb) 13.33°C
Surface Bucket Temp (°C) 13.9
Visibility 1-5

Clouds, Type Strat
Cloud Cover (%) 95
Swell Direction 270°
Height 2-4
Length
Comments 9 miles off Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.55 | 33.75 | 25.34 | .72 | .68 | | .79 | 0.28 | 0.60 | 86.4 | 14.1 | 6.13 | |
| 5 | 13.22 | 33.67 | 25.35 | 1.05 | 6.15 | | .89 | 0.65 | 0.29 | 101.6 | 15.6 | 6.52 | |
| 10 | 12.97 | 33.69 | 25.41 | 1.11 | 6.79 | | .98 | 0.62 | 0.22 | 107.2 | 21.2 | 5.07 | |
| 25 | 12.24 | 33.70 | 25.55 | 1.14 | 11.34 | | 1.22 | 0.66 | 0.84 | | | | |
| 50 | 11.24 | 33.74 | 25.77 | 1.65 | 16.58 | | 1.54 | 0.38 | -0.07 | 59.6 | 8.2 | 7.39 | |
| 100 | | | | 0.09 | 24.32 | | 1.83 | 0.08 | 0.33 | 36.3 | 3.1 | 11.83 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time
Water color (Forel) 7
(Munsell) 5G 5/6

Station No. 12-3
Latitude 36°50.32'N
Longitude 121° 59.11'W
Secchi Depth 11.5m
Sonic Depth 82.5m
Weather

Wind Speed 1-2k
Wind Direct. (True) 140°
Air Temp (Dry Bulb) 18.06°C
Air Temp (Wet Bulb) 14.72°C
Surface Bucket Temp (°C) 13.9
Visibility 1-5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 270°
Height 2-4
Length
Comments 10.8 miles from Soquel Cove

* not detected

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 13.69 | 33.71 | 25.27 | .48 | 3.80 | 3.10 | .72 | 0.95 | 0.17 | 186.5 | 27.1 | 6.88 | |
| 5 | 13.50 | 33.70 | 25.31 | .58 | 3.69 | 3.02 | .71 | 1.05 | 0.33 | 135.9 | 23.7 | 5.73 | |
| 10 | 13.06 | 33.62 | 25.34 | .22 | 6.40 | 6.29 | .80 | 1.01 | 0.45 | 220.9 | 39.8 | 5.55 | |
| 25 | 12.12 | 33.69 | 25.56 | 1.22 | 12.53 | 12.59 | | 0.61 | ND* | 34.8 | 3.4 | 10.12 | |
| 50 | 11.11 | 33.74 | 25.80 | 1.48 | 16.90 | 17.13 | 1.63 | 0.30 | | 42.9 | 3.6 | 11.83 | |
| 75 | 10.83 | 33.79 | 25.88 | 1.91 | 19.78 | 29.62 | 1.74 | 0.28 | 0.06 | 55.7 | 3.0 | 18.68 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 1130
Water color (Forel) 5
(Munsell) 10G 5/6

Station No. 12-4
Latitude 36°51.96'N
Longitude 121°58.30'W
Secchi Depth 17m
Sonic Depth 64m
Weather

Wind Speed 0
Wind Direct. (True) -
Air Temp (Dry Bulb) 13.89°C
Air Temp (Wet Bulb) 12.50°C
Surface Bucket Temp (°C) 15.21
Visibility 0-5

Clouds, Type Stratus
Cloud Cover (%) 85
Swell Direction 280°
Height 2-4
Length
Comments 6.8 miles from Soquel Cove

* not detected

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.31 | 33.74 | 24.96 | .93 | 1.92 | .98 | .68 | 0.42 | ND* | 111.1 | 15.3 | 7.27 | |
| 5 | 14.86 | 33.72 | 25.04 | .97 | 2.03 | .83 | .65 | 0.39 | 0.35 | 134.7 | 17.7 | 7.61 | |
| 10 | 14.66 | 33.74 | 25.10 | 1.31 | 4.05 | 1.69 | .76 | 1.11 | 0.64 | 192.1 | 31.9 | 6.03 | |
| 25 | 12.76 | 33.70 | 25.45 | 3.52 | 9.50 | 8.19 | 1.29 | 0.58 | 0.52 | 96.9 | 12.3 | 7.85 | |
| 50 | 11.28 | 33.73 | 25.76 | 2.48 | 16.61 | 18.29 | 1.67 | 0.30 | | 28.1 | 2.3 | 12.02 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 1245
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 12-5
Latitude 36°53.5' N
Longitude 121°57.3' W
Secchi Depth 17 m
Sonic Depth 27.4 m
Weather

Wind Speed 0
Wind Direct. (True) -
Air Temp (Dry Bulb) 18.06°C
Air Temp (Wet Bulb) 14.17°C
Surface Bucket Temp (°C) 15.6
Visibility 5-10

Clouds, Type cirrus/stratus
Cloud Cover (%) 50
Swell Direction 270°
Height 2-4
Length
Comments 6.3 miles from Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.44 | 33.77 | 24.96 | 1.06 | 1.61 | 1.14 | .63 | 0.23 | | 134.2 | 16.2 | 8.28 | |
| 5 | 14.83 | 33.70 | 25.08 | 1.03 | 1.83 | 1.33 | .58 | 0.18 | 0.12 | 157.6 | 20.4 | 7.74 | |
| 10 | 14.41 | 33.73 | 25.15 | 1.28 | 1.06 | 1.66 | .69 | 0.49 | | | | | |
| 15 | 13.50 | 33.84 | 25.29 | 1.76 | 3.34 | 2.89 | 1.82 | 0.70 | 0.02 | 130.0 | 22.0 | 5.91 | |
| 20 | 13.05 | 33.87 | 25.38 | 2.06 | 5.28 | 4.62 | .56 | 0.72 | 0.31 | 130.0 | 22.0 | 5.95 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 1415
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 12-6
Latitude 36°54.45' N
Longitude 121°56.72' W
Secchi Depth 17 m
Sonic Depth 25.6 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 240°
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C) 15.6
Visibility 5-10

Clouds, Type cirrus
Cloud Cover (%) 70
Swell Direction 270°
Height 1-2
Length
Comments 3 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.33 | 33.75 | 24.96 | .96 | 1.41 | 1.13 | .70 | 0.70 | | 127.9 | 16.7 | 7.66 | .70 |
| 5 | 14.91 | 33.73 | 25.09 | .89 | 1.71 | 1.55 | .65 | 0.52 | 0.17 | 130.7 | 18.9 | 7.23 | 1.00 |
| 10 | 14.24 | 33.66 | 25.12 | .99 | 1.95 | 1.66 | .65 | 1.21 | 0.24 | 140.5 | 19.1 | 7.35 | 1.07 |
| 15 | 13.16 | 33.75 | 25.41 | 2.07 | 4.70 | 3.13 | .88 | 1.20 | 0.34 | 138.5 | 21.2 | 6.55 | 1.06 |
| 20 | 12.30 | 33.73 | 25.57 | 3.14 | 8.73 | 9.41 | 1.21 | 1.51 | 0.54 | 152.9 | 30.7 | 4.99 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 1520
Water color (Forel) 5
(Munsell) 10G 5/6

Station No. 12-7
Latitude 36°55.19' N
Longitude 121°56.29' W
Secchi Depth 16 m
Sonic Depth 20.1 m
Weather

Wind Speed -
~~Wind Direct. (True)~~ -
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 13.89°C
Surface Bucket Temp (°C) 15.8
Visibility 5-7

Clouds, Type cumulus cirrostratus
Cloud Cover (%) 85
Swell Direction
Height
Length
Comments 3.2 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.46 | 33.76 | 24.94 | 2.25 | 1.55 | 3.63 | .72 | 0.60 | 0.16 | 109.0 | 11.1 | 9.84 | .78 |
| 5 | 15.37 | 33.75 | 25.05 | 2.20 | 1.95 | 4.36 | .68 | 0.37 | 0.01 | 139.8 | 17.7 | 7.90 | 1.00 |
| 10 | 14.10 | 33.71 | 25.19 | 1.63 | 1.99 | 3.75 | .68 | 0.49 | | | | | .86 |
| 15 | 13.15 | 33.80 | 25.44 | 2.07 | 3.94 | 4.91 | .79 | 0.44 | 0.85 | 159.3 | 28.6 | 5.56 | .76 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 1600
Water color (Forel) 6
(Munsell) 10G 5/6

Station No. 12-8
Latitude 36°56.2' N
Longitude 121°55.9' W
Secchi Depth 17.5 m
Sonic Depth 16.5 m
Weather

Wind Speed 3-5 k
Wind Direct. (True) 220°
Air Temp (Dry Bulb) 13.28°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C) 16.25
Visibility 5-10

Clouds, Type cirrus stratus
Cloud Cover (%) 80
Swell Direction
Height
Length
Comments

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 16.08 | 33.76 | 24.80 | 2.33 | 1.17 | 3.92 | .67 | 0.59 | -0.01 | 123.8 | 14.3 | 8.65 | .98 |
| 5 | 15.25 | 33.66 | 24.83 | 1.99 | 1.67 | 4.28 | .66 | 0.29 | | 104.7 | 13.9 | 7.54 | 1.29 |
| 10 | 13.99 | 33.69 | 25.20 | 2.51 | 2.67 | 5.10 | .81 | 0.24 | 0.31 | 102.7 | 12.9 | 7.96 | .89 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/12/77
Time 1615
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 12-9
Latitude 36°57.15' N
Longitude 121°55.19' W
Secchi Depth 11.5 m
Sonic Depth 10 m
Weather

Wind Speed 3-5
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 13.28°C
Air Temp (Wet Bulb) 13.61°C
Surface Bucket Temp (°C) 16.2
Visibility 5-10

Clouds, Type cirrus/stratus
Cloud Cover (%) 80
Swell Direction
Height
Length
Comments 1.5 miles from Sea Cliff

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 16.29 | 33.77 | 24.76 | 2.41 | 1.13 | 4.05 | .60 | 0.41 | -0.04 | 150.7 | 19.2 | 7.84 | - |
| 5 | 14.99 | 33.77 | 25.05 | 2.53 | 1.09 | 4.25 | .68 | 0.25 | 0.23 | 102.6 | 13.1 | 7.86 | 3.39 |
| 10 | 13.83 | 33.73 | 25.26 | 3.65 | 1.36 | 11.18 | .95 | 0.22 | | 147.8 | 21.0 | 7.06 | 3.61 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 0820
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 13-1
Latitude 36°56.2' N
Longitude 121°55.35' W
Secchi Depth 10 m
Sonic Depth 13.4 m
Weather

Wind Speed 0
Wind Direct. (True) calm
Air Temp (Dry Bulb) 15.00°C
Air Temp (Wet Bulb) 12.72°C
Surface Bucket Temp (°C)
Visibility 1-5

Clouds, Type cirrus/stratus
Cloud Cover (%) 40
Swell Direction 270°
Height 0 (calm)
Length
Comments .940 miles from Concrete Boat

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.84 | 33.75 | 25.06 | 4.00 | 1.72 | 4.34 | .88 | 0.52 | 0.01 | 124.6 | 8.0 | 15.52 | 2.67 |
| 5 | 14.02 | 33.73 | 25.22 | 3.69 | 2.50 | 4.06 | .85 | 0.32 | | 125.0 | 12.1 | 10.31 | 1.35 |
| 10 | 13.26 | 33.75 | 25.40 | 2.94 | 2.76 | 4.61 | .83 | n.g. | n.g. | 167.0 | 29.1 | 5.74 | 24.0 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 0915
Water color (Forel) 7
(Munsell) 10G 7/6

Station No. 13-2
Latitude 36°56.02' N
Longitude 121°56.00' W
Secchi Depth 13 m
Sonic Depth 19.8 m
Weather

Wind Speed 0
Wind Direct. (True) calm
Air Temp (Dry Bulb) -
Air Temp (Wet Bulb) -
Surface Bucket Temp (°C) 15.75
Visibility 1-5

Clouds, Type cirrus/stratus
Cloud Cover (%) 40
Swell Direction calm
Height calm
Length
Comments 2.06 miles from Concrete Boat

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.51 | 33.75 | 24.92 | 6.77 | 1.49 | 4.72 | .87 | 0.87 | | 98.9 | 11.6 | 8.52 | |
| 5 | 15.29 | 33.76 | 24.98 | 6.84 | 1.53 | - | .76 | 0.45 | | 94.0 | 11.8 | 7.99 | |
| 10 | 14.27 | 33.69 | 25.14 | 5.95 | 2.27 | 3.30 | .76 | 0.34 | 0.11 | 93.6 | 13.4 | 6.99 | |
| 15 | 13.35 | 33.74 | 25.36 | 8.11 | 3.89 | 6.80 | .99 | 0.40 | 0.36 | 160.9 | 23.9 | 6.75 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 0915
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 13-3
Latitude 36°55.3' N
Longitude 121°56.4' W
Secchi Depth 12 m
Sonic Depth 23.8 m
Weather

Wind Speed 0
Wind Direct. (True) calm
Air Temp (Dry Bulb) 16.89°C
Air Temp (Wet Bulb) 13.78°C
Surface Bucket Temp (°C) 15.45
Visibility 0-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction 270°
Height 0-1
Length
Comments 2.92 miles from Concrete Ship

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.23 | 33.74 | 24.97 | 3.56 | 1.20 | 2.48 | 1.05 | 0.12 | 0.65 | 139.9 | 16.2 | 8.66 | 2.70 |
| 5 | 14.90 | 33.73 | 25.04 | 1.71 | 1.42 | 2.85 | 0.79 | 0.64 | 0.32 | 81.6 | 11.0 | 7.44 | 1.37 |
| 10 | 13.31 | 33.76 | 25.39 | 1.87 | 3.76 | 4.44 | 0.99 | 1.43 | 0.75 | 188.6 | 29.2 | 6.47 | .80 |
| 15 | 12.91 | 33.77 | 25.48 | 3.90 | 6.06 | 9.82 | 1.16 | 1.61 | 0.76 | 137.8 | 21.9 | 6.29 | 1.32 |
| 20 | 12.60 | 33.69 | 25.48 | 3.23 | 6.92 | 6.50 | 1.49 | 1.25 | 0.53 | 144.3 | 22.4 | 6.47 | 1.05 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 1040
Water color (Forel) 5
(Munsell) 10 G 7/6

Station No. 13-4
Latitude 36°54.4'N
Longitude 121°56.9'W
Secchi Depth 9m
Sonic Depth 25.6m
Weather

Wind Speed 0
Wind Direct. (True) 120 calm
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 14.44°C
Surface Bucket Temp (°C) 15.6
Visibility 0-5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 270°
Height Calm
Length
Comments 4.0 miles from Concrete Ship

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.85 | 33.74 | 25.06 | 1.17 | 1.15 | 2.22 | .82 | 0.70 | 0.12 | 138. | 15.4 | 8.96 | |
| 7 | 14.34 | 33.68 | 25.11 | 1.00 | 1.06 | 2.03 | .65 | 0.68 | | | | | |
| 10 | 12.35 | 33.74 | 25.53 | .88 | .88 | 1.45 | .63 | | | 336. | 48.3 | 6.97 | 1.22 |
| 15 | 12.45 | 33.75 | 25.56 | 1.82 | 3.64 | 3.10 | .86 | 0.83 | 0.42 | | | | .70 |
| 20 | 12.20 | 33.72 | 25.56 | 3.66 | 7.24 | 9.38 | 1.25 | | | 218. | 28.0 | 7.77 | 1.02 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 1040
Water color (Forel) 5
(Munsell) 10 G 7/6

Station No. 13.4 ozone exp
Latitude 36°54.4'N
Longitude 121°56.9'W
Secchi Depth 9m
Sonic Depth 25.6m
Weather

Wind Speed 0
Wind Direct. (True) 120 calm
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 14.44°c
Surface Bucket Temp (°C) 15.6
Visibility 0-5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 270°
Height Calm
Length
Comments 4 miles from Concrete ship

Ozonized

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.85 | 33.74 | 25.06 | .11 ND | 2.01 | | .59 | | | 138. | 15.4 | 8.96 | .55 |
| 5-9 | 14.34 | 33.68 | 25.11 | .12 ND | 3.59 | | .66 | | | 336. | 48.3 | 6.97 | .72 |
| 13-17 | 12.45 | 33.75 | 25.56 | 1.18 ND | 3.57 | | .68 | | | 218. | 28.0 | 7.77 | 1.27 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 1640
Water color (Forel) 5
(Munsell) 10G 7/6

Station No. 13.4 Ozone exp.
Latitude 36°54.4'N
Longitude 121°56.9'W
Secchi Depth 9m
Sonic Depth 25.6m
Weather

Wind Speed 0
Wind Direct. (True) 120 calm
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 14.44°C
Surface Bucket Temp (°C) 15.6
Visibility 0-5

Clouds, Type Stratus
Cloud Cover (%) 100
Swell Direction 270°
Height Calm
Length
Comments 4 miles from Concrete Ship

not Ozonized

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.85 | 33.74 | 25.06 | .93 | 1.31 | 2.45 | .73 | | | 138. | 15.4 | 8.96 | 1.01 |
| 5-9 | 14.34 | 33.68 | 25.11 | 1.44 | 1.26 | 2.13 | .58 | | | 336. | 48.3 | 6.97 | 1.29 |
| 13-17 | 12.45 | 33.75 | 25.56 | 1.03 | 1.45 | 2.02 | .60 | | | 218. | 28.0 | 7.77 | 1.15 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 1445
Water color (Forel) 7
(Munsell) 5G 5/6

Station No. 13.5 Ozone Exp.
Latitude 36°50.3'N
Longitude 121°59.2'W
Secchi Depth 8 m
Sonic Depth 82.3m
Weather

Wind Speed 4-6k
Wind Direct. (True) 235°
Air Temp (Dry Bulb) 16.94°C
Air Temp (Wet Bulb) 14.44°C
Surface Bucket Temp (°C) 14.52
Visibility 1-10

Clouds, Type Strat/Cir
Cloud Cover (%) 40
Swell Direction 270°
Height 1
Length
Comments 6.8 miles from Soquel Cove

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea um |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc filt | 14.33 | 33.67 | 25.11 | .27 | 2.62 | 3.90 | .84 | | | | | | 1.09 |
| sfc unfilt | 14.33 | 33.67 | 25.11 | .14 | 2.48 | 3.91 | .83 | | | | | | |
| 8-12 filt | 13.47 | 33.61 | 25.27 | .54 | 4.17 | 5.07 | .87 | | | | | | .95 |
| 8-12 unfilt | 13.47 | 33.61 | 25.27 | .43 | 4.21 | - | .91 | | | | | | |
| 53-57 filt | 11.26 | 33.76 | 25.78 | 2.71 | 16.89 | 18.63 | 1.70 | | | | | | 1.43 |
| 53-57 unfilt | 11.26 | 33.76 | 25.78 | 2.61 | 16.93 | 18.78 | 1.74 | | | | | | |
| sfc unfunoz | 14.33 | 33.67 | 25.11 | .16 | 2.37 | 3.81 | .89 | | | | | | 2.54 |
| sfc unf oz | 14.33 | 33.67 | 25.11 | ND | 4.19 | - | .92 | | | | | | .67 |
| 8-12 unfunoz | 13.47 | 33.61 | 25.27 | .39 | 4.12 | 5.39 | .89 | | | | | | .94 |
| 53-57 (- +) | 11.26 | 33.76 | 25.78 | .39 | 4.12 | | .89 | | | | | | 1.43 |
| 53-57 (- +) | 11.26 | 33.76 | 25.78 | 2.69 | 16.23 | 18.67 | 1.64 | | | | | | .47 |
| | | | | ND | 18.86 | | 1.73 | | | | | | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/13/77
Time 1445
Water color (Forel) 7
(Munsell) 5G 5/6

Station No. 13-5
Latitude 36°50.3' N
Longitude 121°59.2' W
Secchi Depth 8 m
Sonic Depth 82.3 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 235°
Air Temp (Dry Bulb) 16.94°C
Air Temp (Wet Bulb) 14.44°C
Surface Bucket Temp (°C) 14.52
Visibility 1-10

Clouds, Type strat/cir
Cloud Cover (%) 40
Swell Direction 270°
Height 1
Length
Comments 6.8 miles from Soquel Cove

filtered unozonized

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.33 | 33.67 | 25.11 | .23 | 2.81 | 3.76 | .64 | | | | | | |
| 8-12 | 13.47 | 33.61 | 25.27 | .51 | 4.18 | 4.11 | .72 | | | | | | |
| 53-57 | 11.26 | 33.76 | 25.78 | 1.63 | 17.05 | 18.69 | 1.34 | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 13-5 | Wind Speed | 4-6 k | Clouds, Type | Strat/Cirrus |
| Vessel | R/V ACANIA | Latitude | 36°50.3' N | Wind Direct. (True) | 235° | Cloud Cover (%) | 40 |
| Date | 9/13/77 | Longitude | 121°59.2' W | Air Temp (Dry Bulb) | 16.94°C | Swell Direction | 270° |
| Time | 1445 | Secchi Depth | 8 m | Air Temp (Wet Bulb) | 14.44°C | Height | 1 |
| Water color (Forel) | 7 | Sonic Depth | 82.3 m | Surface Bucket Temp (°C) | 14.52 | Length | |
| (Munsell) | 5G 5/6 | Weather | | Visibility | 1-10 | Comments | 6.8 miles from Soquel Cove |

unfiltered unozonized

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.33 | 33.67 | 25.11 | .04 | 2.53 | 3.46 | .60 | 0.99 | | 287.6 | 41.1 | 7.01 | 1.11 |
| 8-12 | 13.47 | 33.61 | 25.27 | .36 | 4.17 | 3.97 | .67 | 1.14 | 0.44 | 206.3 | 29.2 | 7.06 | 1.01 |
| 53-57 | 11.26 | 33.76 | 25.78 | 1.30 | 17.92 | 18.66 | 1.49 | 0.28 | 0.14 | 87.7 | 9.9 | 8.90 | 1.45 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 13-6 | Wind Speed | 2-4 k | Clouds, Type | cir/strat |
| Vessel | R/V ACANIA | Latitude | 36°46.7' N | Wind Direct. (True) | 240° | Cloud Cover (%) | 65 |
| Date | 9/13/77 | Longitude | 122°01.2' W | Air Temp (Dry Bulb) | 17.22°C | Swell Direction | 270° |
| Time | 1715 | Secchi Depth | 11 m | Air Temp (Wet Bulb) | 14.44°C | Height | 1 |
| Water color (Forel) | 8 | Sonic Depth | 500 fath | Surface Bucket Temp (°C) | 14.65 | Length | |
| (Munsell) | 10GY 7/6 | Weather | | Visibility | 0-5 | Comments | 9.52 miles from Point Piños |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc oz fil | 14.35 | 33.66 | 25.10 | 0.13 | 4.61 | 26.29 | .76 | 1.16 | 0.66 | 375.0 | 49.0 | 7.65 | 0.01 |
| 8-12 oz fil | 13.26 | 33.69 | 25.35 | 0.16 | 6.36 | 7.48 | .76 | 1.10 | 0.64 | 254.7 | 34.6 | 7.36 | 0.16 |
| 53-57 oz fil | 11.14 | 33.75 | 25.80 | 0.17 | 20.62 | 14.95 | 1.60 | 0.37 | 0.41 | 77.4 | 3.9 | 19.86 | 0.17 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 14-2 | Wind Speed | 0-1 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°40.72' N | Wind Direct. (True) | 130° | Cloud Cover (%) | 80 |
| Date | 9/14/77 | Longitude | 121°55.29' W | Air Temp (Dry Bulb) | 18.89°C | Swell Direction | calm |
| Time | 1145 | Secchi Depth | 8 m | Air Temp (Wet Bulb) | 13.89°C | Height | |
| Water color (Forel) | 6 | Sonic Depth | 75 m | Surface Bucket Temp (°C) | 15.1 | Length | |
| (Munsell) | 5G 5/6 | Weather | | Visibility | 13 | Comments | 2.8 miles from Point Piños |

Unfiltered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.77 | 33.71 | 25.05 | 0.42 | 1.03 | 1.84 | .82 | 1.46 | 0.47 | 268.5 | 34.4 | 7.81 | |
| 3 | 14.59 | 33.71 | 25.09 | 0.28 | .85 | .96 | 1.39 | 1.54 | 0.90 | 338.6 | 63.1 | 5.36 | |
| 7 | 14.17 | 33.72 | 25.16 | 0.59 | 2.14 | 1.88 | 3.29 | 1.89 | 1.34 | 322.6 | 60.4 | 5.35 | |
| 10 | 14.01 | 33.71 | 25.21 | 1.12 | 2.38 | 1.49 | .92 | 1.87 | 0.73 | 207.1 | 35.6 | 2.82 | |

| | | | | | |
|---|---|---|---|---|---|
| Cruise NASA 2 | Station No. 14-2 | Wind Speed 0-1 k | Clouds, Type stratus |
| Vessel R/V ACANIA | Latitude 36°40.72' N | Wind Direct. (True) 130° | Cloud Cover (%) 80 |
| Date 9/14/77 | Longitude 121°55.29' W | Air Temp (Dry Bulb) 18.89°C | Swell Direction calm |
| Time 1145 | Secchi Depth 8 m | Air Temp (Wet Bulb) 13.89°C | Height |
| Water color (Forel) 6 | Sonic Depth 75 m | Surface Bucket Temp (°C) 15.1 | Length |
| (Munsell) 5G 5/6 | Weather | Visibility 13 | Comments 2.8 miles from Point Piños |

filtered

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.77 | 33.71 | 25.05 | .63 | 1.08 | .91 | .96 | | | 268.5 | 34.4 | 7.81 | |
| 3 | 14.59 | 33.71 | 25.09 | .64 | .73 | 1.46 | 3.03 | | | 338.6 | 63.1 | 5.36 | |
| 7 | 14.17 | 33.72 | 25.16 | .56 | 2.01 | 1.73 | 2.00 | | | 322.6 | 60.4 | 5.35 | |
| 10 | 14.01 | 33.71 | 25.21 | .75 | 2.65 | 1.53 | .88 | | | 207.1 | 35.6 | 2.82 | |

| | | | | | |
|---|---|---|---|---|---|
| Cruise NASA 2 | Station No. 14-3 | Wind Speed 0 | Clouds, Type stratus |
| Vessel R/V ACANIA | Latitude 36°46.84' N | Wind Direct. (True) 0 | Cloud Cover (%) 75 |
| Date 9/14/77 | Longitude 122°00.99' W | Air Temp (Dry Bulb) 19.17°C | Swell Direction |
| Time 1330 | Secchi Depth 12 m | Air Temp (Wet Bulb) 16.11°C | Height |
| Water color (Forel) 6 | Sonic Depth approx. 500 fm | Surface Bucket Temp (°C) 15.2 | Length |
| (Munsell) 5G 5/6 | Weather | Visibility | Comments 9.5 miles from Point Piños |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.79 | 33.70 | 25.04 | | | | | 0.89 | 0.37 | 196.9 | 27.8 | 7.07 | |
| 5 | 14.24 | 33.73 | 25.17 | | | | | 1.11 | 0.96 | 177.6 | 22.4 | 7.95 | |
| 10 | 13.78 | 33.68 | 25.23 | | | | | 1.25 | 0.76 | 167.6 | 23.9 | 7.02 | |
| 25 | 12.08 | 33.72 | 25.60 | | | | | 0.68 | 0.50 | 78.8 | 12.3 | 6.44 | |
| 50 | 11.33 | 33.74 | 25.75 | | | | | 0.39 | 0.36 | 39.8 | 3.8 | 10.52 | |
| 100 | | | | | | | | 0.36 | | 33.3 | 2.1 | 16.12 | |

| | | | | | |
|---|---|---|---|---|---|
| Cruise NASA 2 | Station No. 14-4 | Wind Speed 4-6 k | Clouds, Type stratus |
| Vessel R/V ACANIA | Latitude 36°48.6' N | Wind Direct. (True) 220° | Cloud Cover (%) 60 |
| Date 9/14/77 | Longitude 122°00.47' W | Air Temp (Dry Bulb) 18.33°C | Swell Direction 0 |
| Time 1445 | Secchi Depth 17 m | Air Temp (Wet Bulb) 15.28°C | Height 0 |
| Water color (Forel) 6 | Sonic Depth 750 fathoms | Surface Bucket Temp (°C) 14.15 | Length |
| (Munsell) 10G 5/6 | Weather | Visibility 0-13 | Comments |

data missing: ----

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.64 | 33.75 | 25.11 | 0.32 | 2.44 | 3.43 | .87 | 0.71 | | 140.2 | 19.4 | 7.23 | -.07 |
| 5 | 14.06 | 33.70 | 25.20 | 0.28 | 2.72 | 3.30 | .76 | 0.49 | 0.17 | 159.7 | 15.0 | 10.68 | ---- |
| 10 | 13.64 | 33.70 | 25.27 | 0.59 | 2.52 | 3.16 | .82 | 0.68 | 0.77 | 104.6 | 11.9 | 8.82 | ---- |
| 25 | 12.30 | 33.71 | 25.55 | 1.55 | 10.19 | 11.00 | 1.26 | 0.90 | 0.35 | 112.2 | 12.7 | 8.83 | ---- |
| 50 | 11.56 | 33.73 | 25.70 | 1.64 | 13.36 | 12.86 | 1.64 | 0.37 | 0.33 | 56.5 | 5.5 | 10.36 | -0.23 |
| 100 | | | | 0.41 | 20.01 | 20.81 | 1.88 | 0.27 | 0.14 | 69.6 | 7.9 | 8.77 | -0.26 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 14-5 | Wind Speed | 3-5 k | Clouds, Type | |
| Vessel | R/V ACANIA | Latitude | 36°50.41' N | Wind Direct. (True) | | Cloud Cover (%) | 15 |
| Date | 9/14/77 | Longitude | 121°59.16' W | Air Temp (Dry Bulb) | 17.78°C | Swell Direction | 0 |
| Time | 1600 | Secchi Depth | 7 m | Air Temp (Wet Bulb) | 14.72°C | Height | 0 |
| Water color (Forel) | 6-7 | Sonic Depth | 78.6 m | Surface Bucket Temp (°C) | 14.6 | Length | |
| (Munsell) | 10G 5/6 | Weather | | Visibility | | Comments | 6.5 miles from Soquel |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.46 | 33.69 | 25.10 | 0.67 | 4.10 | 4.55 | 0.89 | | | | | | 0.11 |
| 5 | 14.05 | 33.66 | 25.18 | 0.64 | 3.59 | 4.01 | 0.89 | | | | | | 1.28 |
| 10 | 13.72 | 33.65 | 25.22 | 0.92 | 4.82 | 5.40 | 0.94 | | | | | | 0.18 |
| 25 | 12.48 | 33.61 | 25.44 | 1.68 | 10.88 | 10.83 | 1.35 | | | | | | 0.18 |
| 50 | 11.36 | 33.76 | 25.77 | 1.12 | 14.47 | 14.40 | 1.62 | | | | | | -0.21 |
| 50 | 11.36 | 33.76 | 25.77 | 2.06 | 14.51 | | 1.63 | | | | | | |
| 50 | 11.36 | 33.76 | 25.77 | 2.09 | 14.44 | | 1.60 | | | | | | |
| 50 | 11.36 | 33.76 | 25.77 | 2.18 | 14.46 | 14.69 | | | | | | | 0.40 |
| 100 | | | | 0.07 | 21.01 | | 1.83 | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 14-5 Kerun | Wind Speed | 3-5 k | Clouds, Type | |
| Vessel | R/V ACANIA | Latitude | 36°50.41' N | Wind Direct. (True) | | Cloud Cover (%) | 15 |
| Date | 9/14/77 | Longitude | 121°59.16' W | Air Temp (Dry Bulb) | 17.78°C | Swell Direction | 0 |
| Time | 1600 | Secchi Depth | 7 m | Air Temp (Wet Bulb) | 14.72°C | Height | 0 |
| Water color (Forel) | 6-7 | Sonic Depth | 78.6 m | Surface Bucket Temp (°C) | 14.6 | Length | |
| (Munsell) | | Weather | | Visibility | | Comments | 6.5 miles from Soquel |

kerun

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.46 | 33.69 | 25.10 | 0.19 | 0.94 | 2.76 | 0.63 | 1.75 | 0.79 | 401.3 | 56.3 | 7.12 | 0.44 |
| 5 | 14.05 | 33.66 | 25.18 | 0.22 | 1.02 | 2.34 | 0.62 | 1.48 | 0.88 | 355.9 | 41.4 | 8.60 | 0.24 |
| 10 | 13.72 | 33.65 | 25.22 | 0.61 | 2.03 | 3.27 | 0.72 | 0.97 | 0.92 | 853.8 | 153. | 5.60 | 0.27 |
| 25 | 12.48 | 33.61 | 25.44 | 2.76 | 10.98 | 11.13 | 1.38 | 0.54 | 0.47 | 70.4 | 7.3 | 9.66 | 0.61 |
| 50 | 11.36 | 33.76 | 25.77 | 1.84 | 15.95 | 17.65 | 1.55 | 0.32 | 0.44 | 41.8 | 2.5 | 16.50 | 0.71 |
| 25R | 12.48 | 33.61 | 25.44 | | | | | | | | | | |
| 50R | 11.36 | 33.76 | 25.77 | | | | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 14-6 | Wind Speed | 6-8 k | Clouds, Type | |
| Vessel | R/V ACANIA | Latitude | 36°52.08' N | Wind Direct. (True) | 220° | Cloud Cover (%) | 10 |
| Date | 9/14/77 | Longitude | 121°58.24' W | Air Temp (Dry Bulb) | 17.78°C | Swell Direction | |
| Time | 1640 | Secchi Depth | 13 m | Air Temp (Wet Bulb) | 14.72°C | Height | |
| Water color (Forel) | 7 | Sonic Depth | 60.3 m | Surface Bucket Temp (°C) | 15.7 | Length | |
| (Munsell) | 5G 7/6 | Weather | | Visibility | 13-20 | Comments | 6.2 miles from Soquel Pt. |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.57 | 33.74 | 24.89 | 1.67 | 1.54 | 1.69 | 0.78 | 0.64 | -0.04 | 180.5 | 19.7 | 9.18 | 0.09 |
| 5 | 15.57 | 33.73 | 24.89 | 1.10 | 1.58 | 1.53 | 0.73 | 0.93 | -0.01 | 150.9 | 15.6 | 9.67 | 0.97 |
| 10 | 14.24 | 33.66 | 25.13 | 1.04 | 1.99 | 1.27 | 0.75 | 1.19 | 0.08 | 230.1 | 28.4 | 8.39 | 1.13 |
| 25 | 12.54 | 33.71 | 25.50 | 3.42 | 8.03 | 6.61 | 1.37 | 1.46 | 0.79 | 105.2 | 14.5 | 7.24 | 1.11 |
| 50 | 11.22 | 33.76 | 25.79 | 2.39 | 16.70 | 18.08 | 1.80 | 0.42 | 0.13 | 43.7 | 4.3 | 10.25 | 1.00 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 0930
Water color (Forel) 6
(Munsell) 10GY 5/6

Station No. 15-1
Latitude 36°46.65' N
Longitude 122°01.05' W
Secchi Depth 6.5 m
Sonic Depth 423 fatn
Weather

Wind Speed 0
Wind Direct. (True) -
Air Temp (Dry Bulb) 16.11°C
Air Temp (Wet Bulb) 14.44°C
Surface Bucket Temp (°C) 14.6
Visibility 0-2

Clouds, Type stratus
Cloud Cover (%)
Swell Direction calm
Height calm
Length
Comments 10.9 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.44 | 33.69 | 25.10 | 0.80 | 0.71 | 13.67 | | 2.37 | 2.00 | 478.7 | 69.5 | 6.89 | 3.04 |
| 5 | 14.26 | 33.65 | 25.11 | 0.35 | 0.44 | 8.94 | | 2.55 | 2.46 | 450.7 | 67.5 | 6.69 | 0.91 |
| 10 | 13.63 | 33.61 | 25.21 | | 3.90 | 21.32 | | 2.32 | 1.91 | 283.0 | 45.5 | 6.22 | |
| 25 | 12.43 | 33.70 | 25.52 | | | | | 0.80 | 0.15 | 141.7 | 11.5 | 12.30 | |
| 50 | 11.67 | 33.73 | 25.69 | 1.81 | 11.21 | 11.85 | | 0.50 | 0.47 | 27.6 | 3.0 | 9.25 | 6.07 |
| 100 | | | | 1.72 | 17.35 | 18.50 | | 0.51 | 0.43 | 22.3 | 2.6 | 8.52 | 0.82 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1020
Water color (Forel) 6-7
(Munsell) 10GY 7/6

Station No. 15-2
Latitude 36°48.64' N
Longitude 122°00.18' W
Secchi Depth 8 m
Sonic Depth 185 m
Weather

Wind Speed 0-1 k
Wind Direct. (True) 130°
Air Temp (Dry Bulb) 16.39°C
~~Air Temp (Wet Bulb)~~ 14.72°C
Surface Bucket Temp (°C) 14.4
Visibility 0-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction calm
Height calm
Length
Comments 8.8 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | | | | | 0.67 | 0.80 | 267.2 | 46.2 | 5.78 | |
| 5 | | | | 0.49 | 1.13 | | 1.01 | 1.61 | 2.13 | 314.5 | 54.3 | 5.80 | |
| 10 | | | | 0.73 | 3.48 | | 0.95 | 1.58 | 0.86 | 160.6 | 24.6 | 6.53 | |
| 25 | | | | 1.63 | 7.07 | | 0.50 | 1.09 | 0.50 | 87.7 | 20.1 | 4.36 | |
| 50 | | | | 3.14 | 12.32 | | 1.09 | 0.55 | 0.24 | 87.7 | 8.3 | 10.57 | |
| 100 | | | | 0.94 | 18.91 | | 2.92 | 0.30 | 0.53 | 97.2 | 4.8 | 20.18 | |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1105
Water color (Forel) 6
(Munsell) 5G 7/6

Station No. 15-3
Latitude 36°50.38' N
Longitude 121°59.09' W
Secchi Depth 7.5 m
Sonic Depth 82.3 m
Weather

Wind Speed 0-2 k
Wind Direct. (True) 170°
Air Temp (Dry Bulb) 17.78°C
Air Temp (Wet Bulb) 15.56°C
Surface Bucket Temp (°C) 14.85
Visibility 0-5

Clouds, Type strat/cum
Cloud Cover (%) 80
Swell Direction calm
Height calm
Length
Comments 7 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.63 | 33.71 | 25.08 | 0.02 | 0.50 | 1.72 | | 1.87 | 0.13 | | | | 0.69 |
| 5 | 14.50 | 33.67 | 25.08 | 0.35 | 0.61 | 1.96 | | 2.31 | 3.10 | 282.9 | 59.4 | 4.76 | 0.76 |
| 10 | 13.99 | 33.69 | 25.20 | 0.44 | 1.90 | 2.74 | | 2.73 | 3.41 | 333.0 | 74.4 | 4.48 | 1.12 |
| 25 | 12.89 | 33.69 | 25.42 | 2.48 | 6.51 | 3.97 | | 2.10 | 0.95 | 159.0 | 29.6 | 5.37 | 1.16 |
| 50 | 11.90 | 33.72 | 25.64 | 4.02 | 10.41 | 15.96 | | 0.67 | 1.08 | 42.0 | 8.9 | 4.70 | 1.27 |
| 75 | 10.78 | 33.80 | 25.90 | 2.26 | 19.08 | 20.04 | | 0.34 | 0.54 | 24.4 | 3.2 | 7.59 | 0.94 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1210
Water color
(Forel) 6
(Munsell) 10G 5/6

Station No. 15-4
Latitude 36°52.19' N
Longitude 121°58.15' W
Secchi Depth 14 m
Sonic Depth 67.7 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 220°
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 15.56°C
Surface Bucket Temp (°C) 15.55
Visibility 5-10

Clouds, Type strat/cum
Cloud Cover (%) 80
Swell Direction calm
Height
Length
Comments

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.44 | 33.75 | 24.93 | | | | | 0.52 | 0.15 | 128.8 | 21.7 | 5.93 | |
| 5 | 15.17 | 33.73 | 24.98 | 1.19 | 1.52 | 6.22 | 0.87 | 0.67 | 0.19 | 165.8 | 28.5 | 5.83 | |
| 10 | 14.72 | 33.78 | 25.11 | 0.87 | 1.47 | 1.38 | | 0.88 | 0.93 | 274.2 | 55.7 | 4.92 | 1.12 |
| 25 | 12.34 | 33.71 | 25.54 | 4.04 | 10.48 | 8.34 | | 0.74 | | 89.9 | 15.8 | 5.68 | 1.17 |
| 50 | 11.43 | 33.72 | 25.73 | 3.69 | 14.96 | 12.53 | | 0.09 | 0.58 | 60.1 | 6.6 | 9.17 | 1.11 |
| 62 | | | | 3.41 | 15.72 | 17.33 | | 0.48 | 0.22 | 45.2 | 4.4 | 10.38 | 2.15 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1325
Water color
(Forel) 5
(Munsell) 10G 7/6

Station No. 15-5
Latitude 36°53.17' N
Longitude 121°57.92' W
Secchi Depth 12 m
Sonic Depth 29.3 m
Weather

Wind Speed 3-5 k
Wind Direct. (True) 230°
Air Temp (Dry Bulb) 17.50°C
Air Temp (Wet Bulb) 15.56°C
Surface Bucket Temp (°C) 15.56
Visibility 5-10

Clouds, Type cum/strat
Cloud Cover (%) 50
Swell Direction calm
Height
Length
Comments 4 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.39 | 33.83 | 25.00 | 0.58 | 2.16 | 1.43 | | 0.66 | | 122.2 | 21.8 | 5.60 | 1.15 |
| 5 | 15.13 | 33.71 | 24.97 | 0.61 | 1.81 | 1.31 | | 1.15 | 0.16 | 178.0 | 27.1 | 6.57 | 1.09 |
| 10 | 14.94 | 33.71 | 25.02 | 1.57 | 1.89 | 2.02 | | 1.31 | 1.02 | 242.1 | 38.9 | 6.23 | 1.19 |
| 15 | 13.59 | 33.67 | 25.26 | 1.19 | 1.68 | 1.68 | | 1.86 | 0.78 | 282.6 | 47.4 | 5.97 | 1.02 |
| 25 | 12.32 | 33.70 | 25.54 | 3.57 | 8.25 | 6.91 | | 0.90 | 0.53 | 125.6 | 22.2 | 5.65 | 1.22 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1420
Water color
(Forel) 6
(Munsell) 10G 7/6

Station No. 15-6
Latitude 36°54.5' N
Longitude 121°56.9' W
Secchi Depth 11 m
Sonic Depth 25.6 m
Weather

Wind Speed
Wind Direct. (True) 260°
Air Temp (Dry Bulb) 17.22°C
Air Temp (Wet Bulb) 15.22°C
Surface Bucket Temp (°C) 15.8
Visibility 1-5

Clouds, Type cum/strat
Cloud Cover (%) 90
Swell Direction 230°
Height calm
Length
Comments 2.9 miles off Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.56 | 33.69 | 24.86 | 1.50 | 1.70 | 2.93 | | 1.59 | 0.12 | 174.2 | 27.7 | 6.28 | 0.89 |
| 5 | 15.37 | 33.66 | 24.88 | 2.78 | 2.08 | 3.99 | | 1.19 | 0.10 | 163.8 | 28.7 | 5.72 | 1.22 |
| 10 | 14.88 | 33.72 | 25.03 | 4.60 | 1.35 | 1.65 | | 1.79 | 0.34 | 222.2 | 34.2 | 6.49 | 98.35 |
| 15 | 13.54 | 33.61 | 25.23 | 3.69 | 5.20 | 5.23 | | 2.53 | 0.89 | 216.8 | 32.2 | 6.74 | 4.64 |
| 20 | 12.79 | 33.70 | 25.45 | 2.03 | 3.99 | 4.08 | | 2.91 | 0.62 | 135.9 | 16.9 | 8.03 | 0.91 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1515
Water color (Forel) 6
(Munsell)

Station No. 15-7
Latitude 36°55.37' N
Longitude 121°56.54' W
Secchi Depth 12 m
Sonic Depth 21.9 m
Weather

Wind Speed 2-4 k
Wind Direct. (True) 290°
Air Temp (Dry Bulb)
Air Temp (Wet Bulb)
Surface Bucket Temp (°C) 15.61
Visibility 0-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction calm
Height
Length
Comments 2.4 miles off Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.69 | 33.73 | 24.86 | 3.21 | 2.08 | 4.18 | | 1.80 | 1.56 | 213.7 | 27.0 | 7.92 | 1.51 |
| 5 | 15.22 | 33.72 | 25.96 | 2.17 | 1.61 | 3.84 | | 1.21 | 0.54 | 165.4 | 15.3 | 10.81 | - |
| 10 | 14.82 | 33.74 | 25.06 | 1.71 | 1.52 | 2.10 | | 1.73 | 0.59 | 205.0 | 28.1 | 7.29 | 1.08 |
| 15 | 13.43 | 33.68 | 25.31 | 2.18 | 3.08 | 3.44 | | 3.72 | 1.65 | 303.8 | 50.3 | 6.04 | 1.25 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time 1600
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 15-8
Latitude 36°56.31' N
Longitude 121°55.7' W
Secchi Depth 14 m
Sonic Depth 18.3 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 270°
Air Temp (Dry Bulb) 16.11°C
Air Temp (Wet Bulb) 14.17°C
Surface Bucket Temp (°C) 15.75
Visibility 0-5

Clouds, Type stratus
Cloud Cover (%) 95
Swell Direction calm
Height
Length
Comments 2.1 miles from Concrete Boat Soquel

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.66 | 33.75 | 24.88 | 2.22 | 1.45 | 3.24 | | 0.94 | | 137.5 | 21.2 | 6.50 | 0.98 |
| 5 | 15.40 | 33.71 | 24.92 | 2.86 | 1.23 | 3.99 | | 0.67 | | 191.6 | 24.7 | 7.75 | 6.06 |
| 10 | 14.49 | 33.66 | 25.07 | 3.51 | 1.28 | 5.18 | | 0.80 | 0.04 | 152.3 | 18.4 | 8.28 | 0.95 |
| 15 | 13.80 | 33.72 | 25.26 | 2.45 | 1.44 | 4.84 | | 0.94 | 0.58 | 180.0 | 25.7 | 7.01 | 0.67 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/15/77
Time
Water color (Forel) 5
(Munsell) 5BG 7/6

Station No. 15-9
Latitude 36°57.13' N
Longitude 121°55.09' W
Secchi Depth 12 m
Sonic Depth 12.8 m
Weather

Wind Speed 0-2 k
Wind Direct. (True) 250°
Air Temp (Dry Bulb) 18.89°C
Air Temp (Wet Bulb) 15.83°C
Surface Bucket Temp (°C) 16.4
Visibility 0-5

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction calm
Height
Length
Comments 1.2 miles off Sea Cliff Beach

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 2.56 | 1.33 | 5.08 | | 0.67 | 0.09 | 150.0 | 21.3 | 7.04 | 1.16 |
| 5 | | | | 4.33 | 1.56 | 6.64 | | 0.45 | | 144.4 | 19.8 | 7.30 | 1.21 |
| 10 | | | | 6.01 | 2.02 | 11.30 | | 1.16 | 0.54 | 218.9 | 30.8 | 7.12 | - |

| | | | |
|---|---|---|---|
| Cruise NASA 2 | Station No. 16-1 | Wind Speed 2-4 k | Clouds, Type stratus |
| Vessel R/V ACANIA | Latitude 36°56.26' N | Wind Direct. (True) 120° | Cloud Cover (%) 85 |
| Date 9/16/77 | Longitude 121°55.87' W | Air Temp (Dry Bulb) 14.44°C | Swell Direction |
| Time 0840 | Secchi Depth 10 m | Air Temp (Wet Bulb) 12.78°C | Height |
| Water color (Forel) 5 | Sonic Depth 18.3 m | Surface Bucket Temp (°C) 15.6 | Length |
| (Munsell) 10G 7/6 | Weather | Visibility 0-5 | Comments 2 miles from Sea Cliff Beach |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.42 | 33.74 | 24.93 | | | | | 1.00 | 0.05 | 131.3 | 19.0 | 6.90 | |
| 5 | 15.41 | 33.73 | 24.93 | | | | | 0.81 | | 191.0 | 32.2 | 5.94 | |
| 10 | 13.84 | 33.64 | 25.20 | | | | | 1.94 | 1.05 | 270.3 | 48.1 | 5.63 | |
| 15 | 13.43 | 33.72 | 25.34 | | | | | 3.11 | 1.80 | 370.9 | 63.8 | 5.82 | |

| | | | |
|---|---|---|---|
| Cruise NASA 2 | Station No. 16-2 | Wind Speed 2-4 k | Clouds, Type stratus |
| Vessel R/V ACANIA | Latitude 36°55.3' N | Wind Direct. (True) 130° | Cloud Cover (%) 80 |
| Date 9/16/77 | Longitude 121°56.46' W | ~~Air Temp (Dry Bulb)~~ [illegible] | ~~Swell Direction~~ |
| Time 0915 | Secchi Depth 11.5 m | Air Temp (Wet Bulb) 13.33°C | Height |
| Water color (Forel) 6 | Sonic Depth 21.9 m | Surface Bucket Temp (°C) 15.3 | Length |
| (Munsell) 10G 7/6 | Weather | Visibility 0-5 | Comments 2.5 miles off Soquel Pt. |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.14 | 33.71 | 25.97 | | | | | 0.98 | | 132.2 | 18.4 | 7.18 | |
| 5 | 15.10 | 33.71 | 24.97 | | | | | 0.59 | | 179.4 | 25.6 | 7.00 | |
| 10 | 14.45 | 33.68 | 25.09 | | | | | 3.52 | 1.15 | 204.5 | 37.1 | 5.51 | |
| 15 | 14.06 | 33.66 | 25.15 | | | | | 2.44 | 0.90 | 272.8 | 49.1 | 5.56 | |

| | | | |
|---|---|---|---|
| Cruise NASA 2 | Station No. 16-3 | Wind Speed 4-5 k | Clouds, Type stratus |
| Vessel R/V ACANIA | Latitude 36°54.63' N | Wind Direct. (True) 120° | Cloud Cover (%) 90 |
| Date 9/16/77 | Longitude 121°56.99' W | Air Temp (Dry Bulb) 15.28°C | Swell Direction |
| Time 0940 | Secchi Depth 10 m | Air Temp (Wet Bulb) 12.78°C | Height |
| Water color (Forel) 6 | Sonic Depth 25.6 m | Surface Bucket Temp (°C) | Length |
| (Munsell) 5G 7/6 | Weather | Visibility 0-5 | Comments 3 miles off Soquel Pt. |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea µM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.76 | 33.72 | 25.06 | | | | | 1.40 | 1.10 | 235.9 | 34.4 | 6.87 | |
| 5 | 14.68 | 33.66 | 25.03 | | | | | 3.14 | | 250.6 | 44.0 | 5.69 | |
| 10 | 14.01 | 33.58 | 25.11 | | 1.55 | 1.87 | | 2.91 | 1.13 | 377.1 | 76.7 | 4.92 | 1.18 |
| 23 | | | | | 7.80 | 1.75 | | 1.86 | 1.05 | 141.4 | 20.1 | 7.02 | 1.35 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 16-4 | Wind Speed | 2-4 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°53.27' N | Wind Direct. (True) | 140° | Cloud Cover (%) | 95 |
| Date | 9/16/77 | Longitude | 121°57.58' W | Air Temp (Dry Bulb) | 16.11°C | Swell Direction | |
| Time | 1005 | Secchi Depth | 9 m | Air Temp (Wet Bulb) | 13.33°C | Height | |
| Water color (Forel) | 7 | Sonic Depth | 29.3 m | Surface Bucket Temp (°C) | 14.7 | Length | |
| (Munsell) | 5G 7/6 | Weather | | Visibility | 0-5 | Comments | 3.8 miles off Soquel Pt. |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.53 | 33.69 | 25.09 | 0.35 | 0.58 | 1.97 | 0.64 | 2.92 | 2.06 | 294.0 | 46.7 | 6.30 | 1.58 |
| 5 | 14.49 | 33.69 | 25.09 | 0.19 | 0.44 | 1.46 | 0.56 | 3.02 | 2.46 | 353.5 | 58.4 | 6.05 | 1.10 |
| 10 | 13.97 | 33.58 | 25.11 | 1.01 | 1.39 | 1.10 | 0.79 | 5.03 | | 381.4 | 61.2 | 6.24 | 4.07 |
| 23 | | | | 2.80 | 8.80 | 9.24 | 1.36 | 1.59 | | 94.0 | 10.8 | 8.75 | 1.25 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 16-5 | Wind Speed | 1-2 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°52.06' N | Wind Direct. (True) | 150° | Cloud Cover (%) | 100 |
| Date | 9/16/77 | Longitude | 121°58.29' W | Air Temp (Dry Bulb) | 16.11°C | Swell Direction | calm |
| Time | 1045 | Secchi Depth | 9 m | Air Temp (Wet Bulb) | 13.06°C | Height | |
| Water color (Forel) | 6 | Sonic Depth | 65.8 m | Surface Bucket Temp (°C) | 15.15 | Length | |
| (Munsell) | 5G 7/6 | Weather | | Visibility | 0-5 | Comments | 5 miles from Soquel Pt. |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 15.08 | 33.70 | 24.98 | 0.14 | 0.99 | 1.41 | 0.60 | 1.73 | 1.08 | 210.8 | 30.9 | 6.83 | 1.46 |
| 5 | 14.94 | 33.70 | 25.00 | 0.26 | 0.97 | 1.59 | 0.59 | 2.09 | 0.40 | 223.1 | 35.9 | 6.22 | 1.46 |
| 10 | 14.65 | 33.71 | 25.07 | 0.36 | 0.98 | 1.23 | 0.57 | 2.28 | 0.52 | 239.8 | 41.6 | 5.77 | 1.27 |
| 25 | 13.28 | 33.66 | 25.33 | 2.26 | 5.30 | 2.72 | 0.95 | 1.92 | 1.19 | 148.8 | 24.4 | 6.10 | 1.75 |
| 60 | 11.23 | 33.75 | 25.78 | 2.64 | 15.41 | 17.42 | 1.66 | 0.69 | 0.63 | 72.4 | 9.6 | 7.55 | 1.24 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cruise | NASA 2 | Station No. | 16-6 | Wind Speed | 1-3 k | Clouds, Type | stratus |
| Vessel | R/V ACANIA | Latitude | 36°50.18' N | Wind Direct. (True) | 210° | Cloud Cover (%) | 100 |
| Date | 9/16/77 | Longitude | 121°59.30' W | Air Temp (Dry Bulb) | 16.39°C | Swell Direction | calm |
| Time | 1155 | Secchi Depth | 8 m | Air Temp (Wet Bulb) | 13.61°C | Height | |
| Water color (Forel) | 7 | Sonic Depth | 80.5 m | Surface Bucket Temp (°C) | 15.0 | Length | |
| (Munsell) | 5G 7/6 | Weather | | Visibility | | Comments | 7 miles from Soquel Pt. |

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.85 | 33.69 | 25.01 | N.D. | 0.85 | 1.74 | 0.52 | 1.37 | 1.32 | 311.3 | 49.9 | 6.3 | 1.27 |
| 5 | 14.80 | 33.70 | 25.03 | N.D. | 0.63 | 1.01 | 0.57 | 1.58 | 0.61 | 271.8 | 42.3 | 6.4 | 1.12 |
| 10 | 14.79 | 33.71 | 25.05 | N.D. | 0.74 | 1.20 | 0.57 | 1.62 | 0.69 | 303.9 | 49.0 | 6.2 | 3.77 |
| 25 | 13.32 | 33.60 | 25.28 | 1.33 | 3.44 | 1.21 | 0.83 | 2.60 | 1.25 | 359.7 | 60.1 | 6.0 | 1.77 |
| 50 | 11.91 | 33.70 | 25.62 | 3.96 | 9.65 | 8.48 | 1.47 | 1.04 | 0.56 | 64.9 | 5.3 | 12.3 | 1.63 |
| 75 | 10.97 | 33.73 | 25.82 | 1.80 | 17.73 | 19.12 | 1.80 | 0.49 | 0.32 | 59.3 | 3.8 | 15.6 | 0.48 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/16/77
Time 1300
Water color (Forel) 6
(Munsell) 10G 7/6

Station No. 16-7
Latitude 36°48.27' N
Longitude 122°00.57' W
Secchi Depth 8 m
Sonic Depth 336.5 m
Weather

Wind Speed 4-6 k
Wind Direct. (True) 220°
Air Temp (Dry Bulb) 16.11°C
Air Temp (Wet Bulb) 13.33°C
Surface Bucket Temp (°C)
Visibility

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction
Height
Length
Comments 9 miles from Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes Urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | 14.92 | 33.66 | 24.98 | 0.06 | 1.88 | 1.64 | 0.61 | 0.94 | 0.32 | 279.8 | 29.4 | 9.5 | 1.24 |
| 5 | 14.57 | 33.67 | 25.08 | 0.07 | 2.00 | 1.71 | 0.61 | 1.68 | 0.07 | 236.1 | 32.2 | 7.3 | 1.51 |
| 10 | 13.66 | 33.70 | 25.27 | N.D. | 1.66 | 1.70 | 0.55 | 2.58 | 1.11 | 371.6 | 45.8 | 8.1 | 1.31 |
| 25 | 12.45 | 33.69 | 25.50 | 1.73 | 10.00 | 10.44 | 1.21 | 1.54 | 0.97 | 293.4 | 23.2 | 12.7 | 1.39 |
| 50 | 11.72 | 33.68 | 25.64 | 1.79 | 13.64 | 13.80 | 1.44 | 0.37 | 0.21 | 135.4 | 4.5 | 29.8 | 1.40 |
| 100 | | | | 0.36 | 22.35 | 25.07 | 1.89 | 0.33 | 0.42 | n.g. | n.g. | | 1.02 |

Cruise NASA 2
Vessel R/V ACANIA
Date 9/16/77
Time
Water color (Forel) 6
(Munsell) 5G 7/6

Station No. 16-8
Latitude 36°46.34' N
Longitude 122°01.62' W
Secchi Depth 9 m
Sonic Depth 987.5 m
Weather

Wind Speed
Wind Direct. (True)
Air Temp (Dry Bulb) 16.39°C
Air Temp (Wet Bulb) 14.17°C
Surface Bucket Temp (°C) 15.35
Visibility 0-5 m

Clouds, Type stratus
Cloud Cover (%) 100
Swell Direction
Height
Length
Comments 11 miles off Soquel Pt.

| Depth m | Temp °C | Sal ‰ | Sigma τ | $NH_3$ µM | $NO_3$ $NO_2$ µM | $SiO_4$ µM | $PO_4$ µM | Chl a µg/L | Pheo-Phy a µg/L | C µg/L | N µg/L | C/N | Notes Urea uM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sfc | | | | 0.04 | 1.03 | 0.05 | 0.53 | | | | | | 0.91 |
| 5 | | | | 0.04 | 0.85 | | 0.56 | | | | | | 1.07 |
| 10 | | | | 0.04 | 0.85 | 0.51 | 0.54 | | | | | | 0.89 |
| 25 | | | | 1.07 | 11.91 | 0.66 | 1.29 | | | | | | 1.02 |
| 50 | | | | 1.99 | 15.05 | 14.89 | 1.69 | | | | | | 1.08 |
| 100 | | | | 2.04 | 20.72 | 25.54 | 2.07 | | | | | | 0.70 |

# PARTICLE SIZE DISTRIBUTIONS

## NASA 1 PARTICLE SIZE DISTRIBUTIONS

The particle size distributions were measured with Coulter glassware interfaced to a Nuclear Data 2400 Multichannel Analyser. Two apertures were used, one with a 70 micrometer orifice and one with a 200 micrometer orifice. The combined size range was from particles of 2 $\mu m^3$ volume to particles of $2^{14}$ $\mu m^3$ volume. This translates into spherical equivalent diameters of 1.56 μm to 31.51 μm. Individual windows covered volumes between half powers of 2 $\mu m^3$ (e.g., window 1 counted particles with volumes between 2 and $2^{1.5}$ $\mu m^3$).

Twenty-eight data points for each sample produced such a large amount of data that we decided to present only four parameters. The first is the total particulate volume computed by multiplying the number of particles in each window by the average of the end volumes and summing. Assuming the distribution fits the hyperbolic curve $dN = CD^{-m}$ where dN is the number of particles in the window divided by the bandwidth in micrometers, a range of hyperbolic slopes (m) from 2 to 6 results in an error of the computed volume of only one to three percent. It is doubtful that any better determination of total volume.

The second parameter is the hyperbolic slope (m) of the incremental size distribution just described. Large values of m indicate a relatively greater proportion of smaller particles. m is the negative slope of the linear regression of the logarithm of the incremental particle concentration (dN) versus the logarithm of the particle diameter (D).

The correlation coefficient (r) of the linear regression of log (dN) vs log (D) is the third parameter. Since the size distributions are

usually monotonic all values of r are near 1.00. Values below .995 indicate visual departures from linearity and values below .99 might be considered to represent poor fits to the hyperbolic distribution. Typically the curves are concave downward at the small diameters and more linear at large diameters.

The last parameter is the flow rate of the small aperture calculated from the flow rate of the large aperture and the three overlapping data windows. Direct measurement of the flow rate gives a value of .018 mℓ $sec^{-1}$, but the computed values average much smaller. This is due to severe clogging problems which happened almost constantly but only for fractions of a second as evidenced on the visual display of the accumulating size distribution. In general, though, the samples with low flow rates displayed remarkable agreement in the relative shape of the three overlapping windows. This may be due to the large number of counts reducing the statistical uncertainties. Most of the samples with flow rates around the measured value were average in their agreement between apertures and a lot of the ones with high flow rates had poor agreement between apertures. Most of the ones with poor agreement were very clean perhaps reflecting poor statistical properties due to a low number of counts. The small aperture is also subject to error due to inhomogeneities in the sample as only 2 mℓ of water are drawn through this aperture as compared with 30 mℓ for the large aperture. The flow rate should probably only be used as a quality check after one has picked out samples that seem erroneous. From the small number of samples that showed poor overlap once the flow rates were adjusted, the data appears to be good. Further editing of our data will await the statistical comparison of the particle size distributions with light transmission and light scattering data.

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 02-01 000 METERS> | .376 | 3.73 | .9804 | .0173 |
| 02-01 005 METERS> | .745 | 3.50 | .9589 | .0222 |
| 03-01 000 METERS> | .442 | 3.78 | .9862 | .0159 |
| 03-01 005 METERS> | .431 | 3.95 | .9770 | .0169 |
| 03-01 010 METERS> | .389 | 3.65 | .9853 | .0234 |
| 03-01 020 METERS> | .323 | 3.49 | .9827 | .0258 |
| 03-02 000 METERS> | .896 | 3.62 | .9825 | .0348 |
| 03-02 005 METERS> | .548 | 3.00 | .9882 | .0355 |
| 03-02 010 METERS> | .393 | 3.33 | .9849 | .0308 |
| 03-02 020 METERS> | .202 | 3.62 | .9794 | .0393 |
| 03-02 FILTERED> | .020 | 3.33 | .9939 | .0367 |
| 03-03 000 METERS> | .841 | 3.18 | .9833 | .0375 |
| 03-03 005 METERS> | .728 | 3.00 | .9906 | .0320 |
| 03-03 010 METERS> | .564 | 3.13 | .9899 | .0224 |
| 03-03 FILTERED> | .016 | 3.22 | .9955 | .0532 |
| 03-04 000 METERS> | 1.038 | 3.08 | .9905 | .0242 |
| 03-04 005 METERS> | 1.047 | 2.96 | .9930 | .0259 |
| 03-04 FILTERED> | .034 | 3.00 | .9777 | .0526 |
| 03-05 000 METERS> | 1.716 | 3.66 | .9876 | .0131 |
| 03-05 005 METERS> | 1.356 | 3.84 | .9951 | .0033 |
| 03-05 008 METERS> | 1.105 | 3.90 | .9925 | .0073 |
| 03-05 FILTERED> | .095 | 4.86 | .9959 | .0038 |
| 03-06 000 METERS> | 1.143 | 3.29 | .9956 | .0149 |
| 03-06 002 METERS> | 1.427 | 3.28 | .9914 | .0150 |
| 03-06 008 METERS> | 1.274 | 3.40 | .9907 | .0146 |
| 03-06 013 METERS> | 1.327 | 3.46 | .9741 | .0185 |
| 03-06 016 METERS> | .571 | 3.70 | .9878 | .0183 |
| 03-07 000 METERS> | .470 | 4.14 | .9830 | .0153 |
| 03-07 005 METERS> | .677 | 4.14 | .9771 | .0128 |
| 03-07 010 METERS> | .579 | 4.09 | .9777 | .0102 |
| 03-07 020 METERS> | .504 | 4.03 | .9744 | .0166 |
| 03-07 FILTERED> | .030 | 3.90 | .9902 | .0273 |
| 03-08 000 METERS> | .409 | 4.26 | .9825 | .0147 |
| 03-08 005 METERS> | .395 | 3.97 | .9776 | .0178 |
| 03-08 010 METERS> | .453 | 3.79 | .9707 | .0160 |
| 03-08 015 METERS> | .415 | 3.65 | .9634 | .0209 |
| 03-08 025 METERS> | .219 | 4.10 | .9859 | .0256 |
| 03-08 FILTERED> | .013 | 3.30 | .9937 | .0527 |
| 04-01 000 METERS> | .891 | 2.72 | .9929 | .0248 |
| 04-01 000 METERS OZONED> | .466 | 3.27 | .9848 | .0214 |
| 04-01 005 METERS> | 1.001 | 2.77 | .9953 | .0185 |
| 04-01 005 METERS OZONED> | .344 | 3.09 | .9765 | .0382 |
| 04-01 010 METERS> | .586 | 2.87 | .9949 | .0231 |
| 04-01 010 METERS OZONED> | .391 | 3.54 | .9787 | .0114 |
| 04-01 015 METERS> | .376 | 3.48 | .9885 | .0358 |
| 04-01 015 METERS OZONED> | .117 | 3.97 | .9880 | .0479 |
| 04-01 FILTERED> | .009 | 3.29 | .9915 | .0707 |
| 04-01 FILTERED OZONED> | .031 | 3.68 | .9883 | .0279 |
| 04-02 000 METERS> | 1.111 | 2.93 | .9953 | .0200 |
| 04-02 004 METERS> | 1.268 | 2.89 | .9965 | .0169 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 04-02 007 METERS≥ | .672 | 2.97 | .9948 | .0265 |
| 04-02 FILTERED≥ | .039 | 3.09 | .9909 | .0318 |
| 04-03 000 METERS≥ | .742 | 2.94 | .9935 | .0199 |
| 04-03 005 METERS≥ | .927 | 2.85 | .9948 | .0179 |
| 04-03 010 METERS≥ | .667 | 2.98 | .9961 | .0205 |
| 04-03 015 METERS≥ | .516 | 3.30 | .9935 | .0239 |
| 04-03 FILTERED> | .011 | 3.81 | .9939 | .0452 |
| 04-04 000 METERS≥ | 1.166 | 3.54 | .9962 | .0086 |
| 04-04 002 METERS≥ | 1.118 | 3.53 | .9946 | .0098 |
| 04-04 008 METERS≥ | 1.039 | 3.25 | .9941 | .0077 |
| 04-04 013 METERS≥ | .837 | 3.32 | .9953 | .0093 |
| 04-04 FILTERED≥ | .018 | 3.88 | .9980 | .0225 |
| 04-05 000 METERS≥ | 1.287 | 3.46 | .9957 | .0073 |
| 04-05 005 METERS≥ | 1.315 | 3.33 | .9948 | .0074 |
| 04-05 008 METERS≥ | 1.277 | 3.23 | .9954 | .0068 |
| 04-05 FILTERED≥ | .022 | 3.92 | .9969 | .0160 |
| 04-06 000 METERS≥ | 1.150 | 3.40 | .9960 | .0088 |
| 04-06 005 METERS≥ | .944 | 3.25 | .9963 | .0082 |
| 04-06 008 METERS≥ | .997 | 3.24 | .9964 | .0088 |
| 04-06 FILTERED≥ | .027 | 3.44 | .9925 | .0257 |
| 05-01 000 METERS≥ | .149 | 3.98 | .9914 | .0128 |
| 05-01 005 METERS≥ | .126 | 3.75 | .9935 | .0160 |
| 05-01 010 METERS≥ | .135 | 4.00 | .9867 | .0139 |
| 05-01 020 METERS≥ | .176 | 4.16 | .9877 | .0123 |
| 05-01 040 METERS≥ | .129 | 4.11 | .9936 | .0139 |
| 05-01 060 METERS≥ | .080 | 4.41 | .9873 | .0197 |
| 05-01 FILTERED> | .071 | 4.49 | .9969 | .0077 |
| 05-02 000 METERS≥ | .452 | 3.68 | .9770 | .0108 |
| 05-02 005 METERS≥ | .449 | 3.71 | .9843 | .0085 |
| 05-02 010 METERS≥ | .437 | 3.73 | .9818 | .0107 |
| 05-02 020 METERS≥ | .464 | 3.70 | .9829 | .0104 |
| 05-02 040 METERS≥ | .253 | 3.92 | .9900 | .0106 |
| 05-02 060 METERS≥ | .160 | 4.63 | .9920 | .0130 |
| 05-02 FILTERED≥ | .019 | 4.09 | .9962 | .0247 |
| 05-03 000 METERS≥ | .354 | 3.83 | .9807 | .0122 |
| 05-03 005 METERS≥ | .356 | 3.83 | .9820 | .0123 |
| 05-03 015 METERS≥ | .381 | 3.86 | .9777 | .0116 |
| 05-03 025 METERS≥ | .371 | 3.79 | .9888 | .0106 |
| 05-03 035 METERS≥ | .376 | 4.18 | .9882 | .0124 |
| 05-03 FILTERED≥ | .016 | 4.30 | .9970 | .0210 |
| 05-04 000 METERS≥ | .854 | 3.37 | .9939 | .0083 |
| 05-04 005 METERS≥ | .844 | 3.43 | .9923 | .0083 |
| 05-04 010 METERS≥ | .644 | 3.50 | .9920 | .0108 |
| 05-04 018 METERS≥ | .744 | 3.51 | .9942 | .0093 |
| 05-04 FILTERED≥ | .016 | 4.07 | .9991 | .0264 |
| 05-05 000 METERS≥ | 1.233 | 3.25 | .9956 | .0064 |
| 05-05 005 METERS≥ | 1.223 | 3.22 | .9971 | .0072 |
| 05-05 010 METERS≥ | .857 | 4.24 | .9940 | .0009 |
| 05-05 018 METERS≥ | 1.164 | 3.26 | .9970 | .0073 |
| 05-06 000 METERS≥ | 1.234 | 3.37 | .9964 | .0062 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 05-06 005 METERS> | 1.254 | 3.31 | .9959 | .0058 |
| 05-06 010 METERS> | 1.192 | 3.44 | .9949 | .0018 |
| 05-07 000 METERS> | 1.636 | 3.08 | .9978 | .0045 |
| 05-07 004 METERS> | 1.666 | 3.20 | .9969 | .0055 |
| 05-07 008 METERS> | 1.672 | 3.20 | .9979 | .0046 |
| 05-07 FILTERED> | .045 | 4.02 | .9941 | .0120 |
| 06-01 000 METERS> | .573 | 4.02 | .9886 | .0202 |
| 06-01 004 METERS> | .633 | 4.03 | .9887 | .0194 |
| 06-01 006 METERS> | .837 | 4.08 | .9875 | .0183 |
| 06-01 FILTERED> | .016 | 3.67 | .9945 | .0531 |
| 06-02 000 METERS> | .434 | 4.21 | .9916 | .0185 |
| 06-02 005 METERS> | .534 | 4.18 | .9875 | .0180 |
| 06-02 010 METERS> | .754 | 4.16 | .9907 | .0160 |
| 06-02 015 METERS> | 3.739 | 4.16 | .9710 | .0109 |
| 06-02 FILTERED> | .169 | 5.17 | .9958 | .0030 |
| 06-03 000 METERS> | .479 | 4.45 | .9893 | .0167 |
| 06-03 005 METERS> | .516 | 4.33 | .9888 | .0166 |
| 06-03 010 METERS> | .935 | 4.14 | .9861 | .0151 |
| 06-03 020 METERS> | 1.016 | 3.98 | .9882 | .0137 |
| 06-03 FILTERED> | .019 | 4.04 | .9973 | .0211 |
| 06-04 000 METERS> | 1.111 | 4.09 | .9814 | .0160 |
| 06-04 010 METERS> | .858 | 3.94 | .9884 | .0200 |
| 06-04 015 METERS> | .732 | 3.84 | .9812 | .0166 |
| 06-05 000 METERS> | .693 | 4.13 | .9880 | .0181 |
| 06-05 005 METERS> | .578 | 4.18 | .9867 | .0222 |
| 06-05 010 METERS> | .626 | 3.94 | .9875 | .0219 |
| 06-05 020 METERS> | .542 | 4.02 | .9873 | .0085 |
| 06-05 FILTERED> | .021 | 3.90 | .9925 | .0366 |
| 06-06 000 METERS> | .503 | 3.94 | .9929 | .0219 |
| 06-06 005 METERS> | .578 | 3.94 | .9919 | .0208 |
| 06-06 010 METERS> | .591 | 3.84 | .9917 | .0212 |
| 06-06 020 METERS> | .550 | 4.05 | .9910 | .0211 |
| 06-06 030 METERS> | .347 | 4.17 | .9835 | .0233 |
| 06-07 000 METERS> | .728 | 4.23 | .9750 | .0119 |
| 06-07 005 METERS | .484 | 4.12 | .9809 | .0197 |
| 06-07 010 METERS> | .481 | 4.06 | .9827 | .0197 |
| 06-07 020 METERS> | .550 | 4.05 | .9821 | .0170 |
| 06-07 040 METERS> | .351 | 4.34 | .9788 | .0223 |
| 06-07 050 METERS> | .178 | 4.31 | .9856 | .0263 |
| 06-07 FILTERED> | .012 | 4.18 | .9964 | .0283 |
| 06-08 000 METERS> | .708 | 4.25 | .9838 | .0119 |
| 06-08 005 METERS> | .725 | 4.30 | .9829 | .0122 |
| 06-08 010 METERS> | .604 | 4.35 | .9856 | .0117 |
| 06-08 020 METERS> | .425 | 4.43 | .9833 | .0145 |
| 06-08 040 METERS> | .244 | 4.45 | .9900 | .0119 |
| 06-08 055 METERS> | .349 | 4.56 | .9857 | .0113 |
| 06-09 000 METERS> | .424 | 3.94 | .9881 | .0129 |
| 06-09 005 METERS> | .457 | 3.87 | .9761 | .0130 |
| 06-09 010 METERS> | .346 | 3.58 | .9712 | .0309 |
| 06-09 020 METERS> | .191 | 4.39 | .9821 | .0222 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 06-09 040 METERS≥ | .089 | 4.03 | .9876 | .0188 |
| 06-09 060 METERS≥ | .064 | 3.97 | .9934 | .0181 |
| 06-10 000 METERS≥ | .228 | 4.29 | .9717 | .0164 |
| 06-10 000 METERS OZONED≥ | .040 | 3.79 | .9899 | .0343 |
| 06-10 005 METERS≥ | .231 | 4.16 | .9796 | .0149 |
| 06-10 005 METERS OZONED≥ | .038 | 3.85 | .9927 | .0407 |
| 06-10 010 METERS≥ | .556 | 4.56 | .9863 | .0053 |
| 06-10 010 METERS OZONED≥ | .133 | 4.35 | .9920 | .0068 |
| 06-10 020 METERS≥ | .493 | 4.64 | .9768 | .0043 |
| 06-10 020 METERS OZONED≥ | .056 | 4.50 | .9957 | .0066 |
| 06-10 040 METERS≥ | .308 | 5.03 | .9903 | .0036 |
| 06-10 040 METERS OZONED≥ | .063 | 4.58 | .9931 | .0103 |
| 06-10 060 METERS≥ | .172 | 4.72 | .9930 | .0056 |
| 06-10 060 METERS OZONED≥ | .077 | 4.39 | .9963 | .0061 |
| 06-11 000 METERS≥ | .254 | 4.89 | .9888 | .0044 |
| 06-11 000 METERS OZONED≥ | .028 | 4.43 | .9943 | .0089 |
| 06-11 005 METERS≥ | .208 | 5.00 | .9852 | .0062 |
| 06-11 005 METERS OZONED≥ | .049 | 4.78 | .9978 | .0076 |
| 06-11 010 METERS≥ | .182 | 4.31 | .9937 | .0099 |
| 06-11 020 METERS≥ | .733 | 4.98 | .9856 | .0059 |
| 06-11 020 METERS OZONED≥ | .072 | 4.63 | .9975 | .0083 |
| 06-11 040 METERS≥ | .186 | 4.79 | .9910 | .0076 |
| 06-11 060 METERS≥ | .158 | 4.88 | .9899 | .0072 |
| 06-11 060 METERS OZONED≥ | .053 | 4.89 | .9974 | .0067 |
| 06-11 FILTERED≥ | .073 | 5.12 | .9971 | .0088 |
| 06-11 FILTERED OZONED≥ | .009 | 3.53 | .9932 | .1302 |
| 07-01 000 METERS≥ | .424 | 4.28 | .9948 | .0111 |
| 07-01 005 METERS≥ | .450 | 4.20 | .9942 | .0096 |
| 07-01 010 METERS≥ | .703 | 4.65 | .9887 | .0044 |
| 07-01 020 METERS≥ | .400 | 4.60 | .9911 | .0060 |
| 07-01 040 METERS≥ | .448 | 4.55 | .9906 | .0042 |
| 07-01 060 METERS≥ | .168 | 4.65 | .9919 | .0079 |
| 07-01 FILTERED≥ | .037 | 5.21 | .9863 | .0082 |
| 09-01 000 METERS≥ | .132 | 4.74 | .9976 | .0130 |
| 09-01 005 METERS≥ | .327 | 4.88 | .9907 | .0108 |
| 09-01 010 METERS≥ | .479 | 4.49 | .9907 | .0095 |
| 09-01 020 METERS≥ | .298 | 4.62 | .9921 | .0104 |
| 09-01 040 METERS≥ | .194 | 4.59 | .9929 | .0062 |
| 09-01 060 METERS≥ | .245 | 4.62 | .9928 | .0119 |
| 09-01 100 METERS≥ | .396 | 4.59 | .9946 | .0102 |
| 09-02 000 METERS≥ | .587 | 3.94 | .9817 | .0092 |
| 09-02 005 METERS≥ | .642 | 3.67 | .9899 | .0068 |
| 09-02 010 METERS≥ | .553 | 3.62 | .9893 | .0074 |
| 09-02 020 METERS≥ | .586 | 3.56 | .9837 | .0088 |
| 09-02 FILTERED≥ | .055 | 4.14 | .9949 | .0100 |
| 09-03 000 METERS≥ | .981 | 3.60 | .9825 | .0061 |
| 09-03 005 METERS≥ | .960 | 3.68 | .9847 | .0054 |
| 09-03 010 METERS≥ | .769 | 3.20 | .9857 | .0059 |
| 09-03 020 METERS≥ | .772 | 3.17 | .9889 | .0064 |
| 09-04 000 METERS≥ | 1.539 | 3.05 | .9762 | .0021 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 09-04 005 METERS> | 1.588 | 3.07 | .9579 | .0056 |
| 09-04 010 METERS> | 1.119 | 3.05 | .9778 | .0041 |
| 09-04 020 METERS> | .651 | 3.29 | .9905 | .0085 |
| 09-05 000 METERS> | 3.000 | 2.83 | .9836 | .0025 |
| 09-05 005 METERS> | 2.866 | 2.45 | .9870 | .0132 |
| 09-05 015 METERS> | 1.536 | 3.16 | .9927 | .0031 |
| 09-06 000 METERS> | 2.906 | 3.07 | .9839 | .0012 |
| 09-06 005 METERS> | MISSING | 2.74 | .9708 | SMALL APERTURE MISSING |
| 09-06 008 METERS> | MISSING | 2.83 | .9752 | SMALL APERTURE MISSING |
| 09-06 FILTERED> | .340 | 5.42 | .9921 | .0017 |
| 10-01 000 METERS> | 1.731 | 3.46 | .9916 | .0025 |
| 10-01 004 METERS> | 2.178 | 2.93 | .9926 | .0034 |
| 10-01 008 METERS> | 1.607 | 3.36 | .9960 | .0032 |
| 10-01 FILTERED> | .250 | 5.51 | .9766 | .0036 |
| 10-02 000 METERS> | 2.842 | 2.95 | .9914 | .0014 |
| 10-02 005 METERS> | 1.949 | 2.74 | .9912 | .0022 |
| 10-02 010 METERS> | .700 | 3.46 | .9893 | .0064 |
| 10-02 015 METERS> | 1.200 | 4.19 | .9864 | .0061 |
| 10-03 000 METERS> | 3.001 | 2.99 | .9878 | .0018 |
| 10-03 005 METERS> | 1.424 | 3.34 | .9915 | .0017 |
| 10-03 010 METERS> | .656 | 3.35 | .9867 | .0117 |
| 10-03 015 METERS> | .609 | 4.00 | .9919 | .0033 |
| 10-04 000 METERS> | 2.754 | 2.72 | .9904 | .0013 |
| 10-04 005 METERS> | 3.137 | 2.55 | .9749 | .0037 |
| 10-04 010 METERS> | 1.032 | 2.80 | .9886 | .0087 |
| 10-04 020 METERS> | .613 | 3.78 | .9929 | .0055 |
| 10-04 FILTERED> | .139 | 4.19 | .9687 | .0206 |
| 10-05 000 METERS> | 2.485 | 2.67 | .9835 | .0017 |
| 10-05 005 METERS> | 1.769 | 3.02 | .9833 | .0024 |
| 10-05 010 METERS> | .624 | 3.31 | .9870 | .0078 |
| 10-05 020 METERS> | .343 | 4.08 | .9967 | .0094 |
| 10-05 FILTERED> | .274 | 5.29 | .9933 | .0024 |
| 10-06 000 METERS> | .431 | 4.40 | .9854 | .0063 |
| 10-06 005 METERS> | .437 | 4.03 | .9874 | .0135 |
| 10-06 010 METERS> | .529 | 4.15 | .9855 | .0103 |
| 10-06 020 METERS> | .325 | 4.27 | .9925 | .0121 |
| 10-06 040 METERS> | .150 | 4.71 | .9889 | .0097 |
| 10-06 060 METERS> | .349 | 4.77 | .9917 | .0089 |
| 10-06 FILTERED> | .049 | 4.29 | .9981 | .0164 |
| 10-07 000 METERS> | .465 | 4.18 | .9880 | .0158 |
| 10-07 005 METERS> | 1.124 | 4.05 | .9769 | .0085 |
| 10-07 010 METERS> | .531 | 4.20 | .9873 | .0121 |
| 10-07 020 METERS> | .496 | 4.24 | .9833 | .0142 |
| 10-07 040 METERS> | .337 | 4.59 | .9894 | .0132 |
| 10-07 060 METERS> | .321 | 4.32 | .9885 | .0155 |
| 10-07 FILTERED> | MISSING | 5.18 | .9097 | SMALL APERTURE MISSING |
| 10-08 000 METERS> | 1.743 | 3.46 | .9878 | .0023 |
| 10-08 005 METERS> | 1.138 | 3.07 | .9879 | .0041 |
| 10-08 020 METERS> | .730 | 3.56 | .9866 | .0059 |
| 10-08 020 METERS> | .444 | 3.28 | .9867 | .0236 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 10-08 040 METERS≥ | .420 | 4.06 | .9953 | .0108 |
| 10-08 FILTERED≥ | .022 | 3.89 | .9951 | .0187 |
| 10-09 000 METERS≥ | 1.693 | 2.84 | .9837 | .0037 |
| 10-09 005 METERS≥ | 1.212 | 2.77 | .9809 | .0067 |
| 10-09 010 METERS≥ | 1.037 | 3.02 | .9835 | .0064 |
| 10-09 020 METERS≥ | .729 | 3.23 | .9853 | .0067 |
| 10-09 FILTERED≥ | .031 | 3.58 | .9856 | .0264 |
| 10-10 000 METERS≥ | 2.952 | 2.67 | .9723 | .0032 |
| 10-10 005 METERS≥ | 2.770 | 2.98 | .9647 | .0062 |
| 10-10 010 METERS≥ | 1.030 | 3.24 | .9873 | .0084 |
| 11-01 000 METERS≥ | .649 | 4.22 | .9938 | .0039 |
| 11-01 005 METERS≥ | .434 | 3.89 | .9879 | .0192 |
| 11-01 010 METERS≥ | .311 | 4.26 | .9852 | .0222 |
| 11-01 015 METERS≥ | .278 | 4.08 | .9894 | .0199 |
| 11-01 FILTERED≥ | .125 | 4.47 | .9935 | .0122 |
| 11-02 000 METERS≥ | .337 | 4.42 | .9876 | .0229 |
| 11-02 005 METERS≥ | .314 | 4.43 | .9875 | .0230 |
| 11-02 010 METERS≥ | .292 | 4.22 | .9906 | .0245 |
| 11-02 020 METERS≥ | .213 | 4.16 | .9897 | .0264 |
| 11-02 040 METERS≥ | .366 | 4.07 | .9909 | .0191 |
| 11-03 000 METERS≥ | .482 | 4.35 | .9763 | .0210 |
| 11-03 005 METERS≥ | .449 | 4.13 | .9750 | .0213 |
| 11-03 010 METERS≥ | .393 | 4.52 | .9735 | .0237 |
| 11-03 020 METERS≥ | .230 | 4.27 | .9881 | .0270 |
| 11-03 040 METERS≥ | .136 | 4.01 | .9905 | .0257 |
| 11-03 060 METERS≥ | .105 | 4.27 | .9878 | .0226 |
| 11-04 000 METERS≥ | .588 | 4.63 | .9737 | .0153 |
| 11-04 005 METERS≥ | .496 | 4.38 | .9743 | .0143 |
| 11-04 010 METERS≥ | .371 | 4.79 | .9684 | .0222 |
| 11-04 020 METERS≥ | .146 | 4.33 | .9907 | .0251 |
| 11-04 040 METERS≥ | .141 | 4.36 | .9880 | .0229 |
| 11-04 060 METERS≥ | .135 | 4.32 | .9898 | .0240 |
| 11-04 FILTERED≥ | .041 | 4.17 | .9879 | .0148 |
| 11-05 000 METERS≥ | .176 | 4.07 | .9902 | .0208 |
| 11-05 005 METERS≥ | .171 | 4.23 | .9859 | .0198 |
| 11-05 010 METERS≥ | .205 | 4.06 | .9850 | .0185 |
| 11-05 020 METERS≥ | .147 | 3.87 | .9884 | .0205 |
| 11-05 040 METERS≥ | .122 | 4.33 | .9906 | .0212 |
| 11-05 060 METERS≥ | .100 | 4.06 | .9861 | .0220 |
| 11-06 000 METERS≥ | .049 | 3.50 | .9884 | .0226 |
| 11-06 005 METERS≥ | .036 | 3.49 | .9901 | .0287 |
| 11-06 010 METERS≥ | .046 | 3.80 | .9934 | .0140 |
| 11-06 020 METERS≥ | .022 | 3.61 | .9893 | .0268 |
| 11-06 040 METERS≥ | .052 | 3.72 | .9866 | .0292 |
| 11-06 060 METERS^≥ | .062 | 3.75 | .9879 | .0227 |
| 11-06 080 METERS≥ | .053 | 3.88 | .9927 | .0263 |
| 11-06 100 METERS≥ | .030 | 3.79 | .9926 | .0319 |
| 11-06 200 METERS≥ | .025 | 3.80 | .9908 | .0214 |
| 12-01 000 METERS≥ | .115 | 4.77 | .9917 | .0279 |
| 12-01 005 METERS≥ | .096 | 5.19 | .9951 | .0245 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 12-01 010 METERS≥ | .148 | 5.12 | .9884 | .0206 |
| 12-01 020 METERS≥ | .213 | 4.58 | .9880 | .0206 |
| 12-01 040 METERS≥ | .092 | 4.13 | .9899 | .0202 |
| 12-01 060 METERS≥ | .102 | 4.26 | .9913 | .0212 |
| 12-02 000 METERS≥ | 1.604 | 2.77 | .9876 | .0054 |
| 12-02 005 METERS≥ | .445 | 3.82 | .9900 | .0130 |
| 12-02 010 METERS≥ | .318 | 3.90 | .9942 | .0169 |
| 12-02 020 METERS≥ | .161 | 4.16 | .9937 | .0249 |
| 12-02 040 METERS≥ | .130 | 4.33 | .9895 | .0209 |
| 12-02 060 METERS≥ | .191 | 4.29 | .9921 | .0231 |
| 12-03 000 METERS≥ | 1.641 | 2.43 | .9840 | .0065 |
| 12-03 005 METERS≥ | 2.682 | 2.65 | .9826 | .0023 |
| 12-03 010 METERS≥ | MISSING | 2.04 | .9480 | SMALL APERTURE MISSIN |
| 12-03 020 METERS≥ | .284 | 3.72 | .9936 | .0194 |
| 12-03 040 METERS≥ | .146 | 4.13 | .9931 | .0217 |
| 12-03 060 METERS≥ | .123 | 4.48 | .9894 | .0203 |
| 12-04 000 METERS≥ | 2.619 | 2.36 | .9743 | .0044 |
| 12-04 005 METERS≥ | 2.672 | 2.43 | .9852 | .0025 |
| 12-04 010 METERS≥ | 2.286 | 2.30 | .9888 | .0040 |
| 12-04 020 METERS≥ | .834 | 2.95 | .9898 | .0108 |
| 12-04 040 METERS≥ | .624 | 3.34 | .9921 | .0174 |
| 12-05 000 METERS≥ | 2.677 | 2.57 | .9763 | .0038 |
| 12-05 005 METERS≥ | 2.357 | 2.42 | .9790 | .0047 |
| 12-05 010 METERS≥ | 3.365 | 1.91 | .9746 | .0034 |
| 12-05 020 METERS≥ | 2.234 | 2.71 | .9846 | .0044 |
| 12-06 000 METERS≥ | 1.164 | 2.63 | .9866 | .0102 |
| 12-06 005 METERS≥ | 1.293 | 2.81 | .9879 | .0053 |
| 12-06 010 METERS≥ | 1.405 | 2.58 | .9897 | .0063 |
| 12-06 020 METERS≥ | 2.096 | 2.59 | .9905 | .0044 |
| 12-07 000 METERS≥ | .803 | 2.87 | .9913 | .0118 |
| 12-07 005 METERS≥ | .958 | 3.01 | .9947 | .0070 |
| 12-07 010 METERS≥ | 1.361 | 2.75 | .9899 | .0065 |
| 12-07 015 METERS≥ | 1.888 | 3.18 | .9913 | .0023 |
| 12-08 000 METERS≥ | MISSING | 2.55 | .9600 | SMALL APERTURE MISSING |
| 12-08 005 METERS≥ | 1.165 | 2.89 | .9862 | .0071 |
| 12-08 010 METERS≥ | 1.226 | 2.95 | .9908 | .0070 |
| 12-09 000 METERS≥ | MISSING | 2.90 | .9356 | SMALL APERTURE MISSING |
| 12-09 005 METERS≥ | 1.231 | 2.92 | .9873 | .0062 |
| 12-09 010 METERS≥ | MISSING | 2.88 | .9789 | SMALL APERTURE MISSING |
| 12-10 000 METERS≥ | .768 | 3.10 | .9922 | .0101 |
| 12-10 005 METERS≥ | .845 | 2.91 | .9929 | .0131 |
| 12-10 010 METERS≥ | 2.038 | 2.93 | .9871 | .0046 |
| 12-11 000 METERS≥ | 1.718 | 2.75 | .9834 | .0042 |
| 12-11 005 METERS≥ | 1.937 | 2.52 | .9812 | .0048 |
| 12-11 010 METERS≥ | 2.339 | 2.95 | .9826 | .0071 |
| 13-01 000 METERS≥ | 2.930 | 2.63 | .9839 | .0041 |
| 13-01 005 METERS≥ | 2.731 | 2.90 | .9817 | .0014 |
| 13-01 010 METERS≥ | 2.341 | 3.01 | .9872 | .0032 |
| 13-01 020 METERS≥ | .478 | 3.92 | .9870 | .0136 |
| 13-01 025 METERS≥ | .466 | 4.20 | .9845 | .0127 |

NASA1 MAY 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. | FLOW |
|---|---|---|---|---|
| 13-02 000 METERS≥ | 3.237 | 2.36 | .9807 | .0023 |
| 13-02 005 METERS≥ | 3.429 | 2.28 | .9830 | .0023 |
| 13-02 010 METERS≥ | 3.248 | 2.53 | .9860 | .0028 |
| 13-02 020 METERS≥ | 1.364 | 2.88 | .9870 | .0067 |
| 13-03 000 METERS≥ | .309 | 4.29 | .9941 | .0117 |
| 13-03 005 METERS≥ | .344 | 4.43 | .9958 | .0089 |
| 13-03 010 METERS≥ | .376 | 4.66 | .9944 | .0074 |
| 13-03 020 METERS≥ | 1.052 | 4.21 | .9881 | .0060 |
| 13-03 040 METERS≥ | .378 | 4.74 | .9923 | .0028 |
| 13-03 060 METERS≥ | .572 | 4.87 | .9850 | .0059 |
| 13-04 000 METERS≥ | .679 | 4.16 | .9913 | .0067 |
| 13-04 005 METERS≥ | .717 | 4.33 | .9828 | .0073 |
| 13-04 010 METERS≥ | .808 | 4.11 | .9882 | .0066 |
| 13-04 020 METERS≥ | .401 | 4.51 | .9923 | .0078 |

## NASA 2 PARTICLE SIZE DISTRIBUTIONS

During this cruise we used the 100 and 400 μm apertures and we sieved the samples for the small aperture through a 25 μm nylon mesh to prevent clogging. A precruise calibration was found to be in error during the cruise, so the window dividers do not fall on half integral powers of 2 $\mu m^3$ volume. The effective size distribution is from 2.6 to 88 μm spherical equivalent diameters. The four overlapping windows of the small and large apertures do not correspond exactly but cover diameters from about 9. to 16. μm. We used the measured flow rates of the apertures so a computed flow rate is not given. The correlation values are not as large because both apertures are used in the overlap region and some noise channels may be included as we haven't had a chance to visually inspect the data since the plotter is away for repairs. The data from the first day has twice as many data points over the same range of particle diameters.

NASA2 SEP 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. |
|---|---|---|---|
| 07-01 000 METERS | 1.333 | 4.06 | .9958 |
| 07-01 003 METERS | .549 | 4.95 | .9901 |
| 07-01 008 METERS | 1.152 | 4.04 | .9939 |
| 07-02 000 METERS | .932 | 3.61 | .9953 |
| 07-02 003 METERS | 1.002 | 3.52 | .9949 |
| 07-02 008 METERS | 1.278 | 3.63 | .9917 |
| 07-02 013 METERS | 2.645 | 3.48 | .9905 |
| 07-03 000 METERS | .286 | 4.77 | .9897 |
| 07-03 005 METERS | 1.265 | 3.48 | .9929 |
| 07-03 010 METERS | 3.612 | 3.32 | .9872 |
| 07-03 015 METERS | 1.257 | 3.53 | .9910 |
| 07 04 000 METERS | .550 | 3.92 | .9949 |
| 07-04 008 METERS | 2.776 | 3.32 | .9913 |
| 07-04 013 METERS | 1.368 | 3.34 | .9916 |
| 07-04 018 METERS | .901 | 3.36 | .9936 |
| 07-04 023 METERS | .900 | 3.57 | .9953 |

NASA2 SEP 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. |
|---|---|---|---|
| 08-01 00 METERS | .697 | 3.81 | .9843 |
| 08-01 008 METERS | 2.277 | 3.46 | .9942 |
| 08-01 013 METERS | 1.591 | 3.59 | .9918 |
| 08-01 018 METERS | .600 | 4.01 | .9958 |
| 08-01 023 METERS | .571 | 4.04 | .9858 |
| 08-01 FILTERED | .170 | 4.13 | .9935 |
| 08-02 000 METERS | .697 | 3.87 | .9898 |
| 08-02 008 METERS | .660 | 4.03 | .9868 |
| 08-02 013 METERS | 1.687 | 3.65 | .9877 |
| 08-02 018 METERS | 1.128 | 3.52 | .9861 |
| 08-02 023 METERS | .493 | 3.91 | .9902 |
| 08-02 FILTERED | .111 | 4.55 | .9957 |
| 08-03 000 METERS | .487 | 3.91 | .9896 |
| 08-03 015 METERS | .228 | 4.29 | .9932 |
| 08-03 040 METERS | .194 | 4.45 | .9920 |
| 08-03 055 METERS | .231 | 4.68 | .9942 |
| 08-03 060 METERS | .349 | 4.93 | .9925 |
| 08-03 065 METERS | .363 | 4.94 | .9937 |
| 08-04 000 METERS | .477 | 3.89 | .9918 |
| 08-04 025 METERS | .314 | 4.22 | .9916 |
| 08-04 050 METERS | .185 | 4.40 | .9934 |
| 08-04 065 METERS | .139 | 4.30 | .9903 |
| 08-04 070 METERS | .178 | 4.42 | .9913 |
| 08-04 075 METERS | .253 | 4.53 | .9891 |
| 08-05 000 METERS | .409 | 4.07 | .9897 |
| 11-01 000 METERS | .510 | 4.11 | .9700 |
| 11-01 005 METERS | .393 | 4.39 | .9863 |
| 11-01 008 METERS | .371 | 4.54 | .9803 |
| 11-01 FILTERED | .099 | 4.78 | .9804 |
| 11-02 000 METERS | .382 | 4.15 | .9894 |
| 11-02 005 METERS | .376 | 4.40 | .9829 |
| 11-02 010 METERS | .416 | 4.17 | .9881 |
| 11-02 015 METERS | .360 | 4.34 | .9897 |
| 11-02 FILTERED | .072 | 4.90 | .9791 |
| 11-03 000 METERS | .310 | 4.10 | .9846 |
| 11-03 005 METERS | .155 | 4.57 | .9905 |
| 11-03 010 METERS | .098 | 4.30 | .9793 |
| 11-03 025 METERS | .095 | 4.70 | .9799 |
| 11-03 050 METERS | .106 | 4.54 | .9804 |
| 11-04 000 METERS | .315 | 4.54 | .9854 |
| 11-04 050 METERS | .146 | 4.73 | .9870 |
| 11-04 100 METERS | .086 | 4.44 | .9839 |
| 11-04 250 METERS | .133 | 4.55 | .9789 |
| 11-04 500 METERS | .128 | 4.65 | .9827 |
| 12-01 000 METERS | .837 | 4.52 | .9860 |
| 12-01 005 METERS | .723 | 4.28 | .9870 |
| 12-01 010 METERS | .635 | 4.44 | .9852 |
| 12-01 025 METERS | .458 | 4.79 | .9807 |
| 12-01 050 METERS | .383 | 4.70 | .9751 |
| 12-01 100 METERS | .373 | 5.06 | .9769 |

NASA2 SEP 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. |
|---|---|---|---|
| 12-01 CLEAN WATER | .194 | 4.84 | .9833 |
| 12-02 000 METERS | .463 | 4.73 | .9881 |
| 12-02 005 METERS | .366 | 4.39 | .9878 |
| 12-02 010 METERS | .300 | 4.65 | .9799 |
| 12-02 025 METERS | .200 | 4.64 | .9886 |
| 12-02 050 METERS | .126 | 4.77 | .9859 |
| 12-02 100 METERS | .197 | 5.28 | .9911 |
| 12-03 000 METERS | .440 | 4.30 | .9835 |
| 12-03 005 METERS | .475 | 4.07 | .9833 |
| 12-03 010 METERS | .374 | 4.54 | .9844 |
| 12-03 025 METERS | .158 | 4.44 | .9867 |
| 12-03 050 METERS | .101 | 4.83 | .9886 |
| 12-03 075 METERS | .114 | 4.96 | .9905 |
| 12-04 000 METERS | .157 | 4.36 | .9881 |
| 12-04 005 METERS | .278 | 3.73 | .9826 |
| 12-04 010 METERS | .487 | 3.81 | .9846 |
| 12-04 025 METERS | .188 | 4.30 | .9891 |
| 12-04 050 METERS | .155 | 5.30 | .9913 |
| 12-06 000 METERS | .250 | 4.58 | .9836 |
| 12-06 005 METERS | .289 | 4.04 | .9888 |
| 12-06 010 METERS | .418 | 3.84 | .9726 |
| 12-06 015 METERS | .493 | 4.09 | .9868 |
| 12-06 020 METERS | .479 | 4.26 | .9931 |
| 12-06 CLEAN | .130 | 4.26 | .9944 |
| 12-07 000 METERS | .190 | 4.58 | .9913 |
| 12-07 005 METERS | .201 | 4.46 | .9815 |
| 12-07 010 METERS | .094 | 4.88 | .9895 |
| 12-07 015 METERS | .316 | 4.26 | .9865 |
| 12-08 000 METERS | .208 | 4.33 | .9923 |
| 12-08 005 METERS | .206 | 4.35 | .9864 |
| 12-08 010 METERS | .275 | 4.48 | .9874 |
| 2-09 000 METERS | .206 | 4.26 | .9887 |
| 12-09 005 METERS | .250 | 4.49 | .9929 |
| 12-09 008 METERS | .384 | 4.75 | .9912 |
| 13-01 000 METERS | .266 | 4.35 | .9907 |
| 13-01 005 METERS | .225 | 4.43 | .9930 |
| 13-01 010 METERS | .241 | 4.59 | .9944 |
| 13-02 000 METERS | .273 | 4.30 | .9906 |
| 13-02 005 METERS | .267 | 4.49 | .9873 |
| 13-02 010 METERS | .242 | 4.26 | .9867 |
| 13-02 015 METERS | .298 | 4.23 | .9900 |
| 13-03 000 METERS | .223 | 4.37 | .9927 |
| 13-03 005 METERS | .300 | 4.47 | .9887 |
| 13-03 010 METERS | .566 | 4.19 | .9934 |
| 13-03 015 METERS | .473 | 4.24 | .9896 |
| 13-03 020 METERS | .519 | 4.21 | .9927 |
| 13-04 000 METERS | .304 | 4.48 | .9901 |
| 13-04 000 OZONED | .116 | 4.49 | .9862 |
| 13-04 007 METERS | .339 | 4.35 | .9880 |
| 13-04 007 OZONED | .093 | 4.25 | .9883 |

NASA2 SEP 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. |
|---|---|---|---|
| 13-04 015 METERS | .533 | 4.33 | .9846 |
| 13-04 015 OZONED | .166 | 4.40 | .9929 |
| 13-05 000 METERS | .583 | 4.32 | .9840 |
| 13-05 000 OZONED | .238 | 4.44 | .9820 |
| 13-05 010 METERS | .558 | 4.21 | .9800 |
| 13-05 010 OZONED | .223 | 4.17 | .9744 |
| 13-05 055 METERS | .128 | 4.81 | .9898 |
| 13-05 055 OZONED | .075 | 4.52 | .9882 |
| 13-06 000 METERS | .638 | 4.08 | .9800 |
| 13-06 000 OZONED | .341 | 4.41 | .9884 |
| 13-06 010 METERS | .407 | 4.40 | .9780 |
| 13-06 010 OZONED | .168 | 4.36 | .9870 |
| 13-06 055 METERS | .101 | 4.73 | .9888 |
| 13-06 055 OZONED | .055 | 4.16 | .9922 |
| 14-02 000 METERS | .717 | 4.28 | .9821 |
| 14-02 003 METERS | .861 | 4.24 | .9831 |
| 14-02 007 METERS | .796 | 4.34 | .9756 |
| 14-02 010 METERS | .753 | 4.33 | .9835 |
| 14-03 000 METERS | .378 | 3.72 | .9931 |
| 14-03 005 METERS | .287 | 3.99 | .9919 |
| 14-03 010 METERS | .313 | 4.13 | .9886 |
| 14-03 FILTERED | .139 | 4.69 | .9946 |
| 14-03 025 METERS | .155 | 4.81 | .9791 |
| 14-03 050 METERS | .099 | 4.66 | .9920 |
| 14-03 100 METERS | .083 | 4.82 | .9866 |
| 14-04 000 METERS | .188 | 4.27 | .9862 |
| 14-04 005 METERS | .224 | 4.15 | .9859 |
| 15-09 000 METERS | .231 | 4.31 | .9910 |
| 15-09 005 METERS | .318 | 4.88 | .9890 |
| 15-09 010 METERS | .727 | 5.06 | .9945 |
| 16-01 000 METERS | .320 | 4.26 | .9883 |
| 16-01 005 METERS | .331 | 4.23 | .9880 |
| 16-01 010 METERS | .507 | 4.00 | .9947 |
| 16-01 015 METERS | .414 | 4.12 | .9917 |
| 16-02 000 METERS | .264 | 4.20 | .9846 |
| 16-02 005 METERS | .314 | 4.03 | .9866 |
| 16-02 010 METERS | .556 | 3.73 | .9909 |
| 16-02 015 METERS | .538 | 3.53 | .9909 |
| 16-03 000 METERS | .485 | 4.18 | .9811 |
| 16-03 005 METERS | .540 | 4.16 | .9829 |
| 16-03 010 METERS | .531 | 3.95 | .9894 |
| 16-03 023 METERS | .377 | 3.95 | .9856 |
| 16-04 000 METERS | .539 | 3.91 | .9892 |
| 16-04 005 METERS | .619 | 4.03 | .9809 |
| 16-04 010 METERS | .514 | 4.09 | .9876 |
| 16-04 023 METERS | .217 | 4.21 | .9869 |
| 16-05 000 METERS | .382 | 3.93 | .9884 |
| 16-05 010 METERS | .378 | 3.99 | .9860 |
| 16-05 010 METERS | .479 | 4.01 | .9857 |
| 16-05 025 METERS | .355 | 3.77 | .9824 |

NASA2 SEP 1977

| SAMPLE IDENTIFICATION | VOL. | SLOPE | CORR. |
|---|---|---|---|
| 16-05 060 METERS | .221 | 4.92 | .9929 |
| 16-06 000 METERS | .621 | 4.13 | .9851 |
| 16-06 005 METERS | .573 | 4.01 | .9836 |
| 16-06 010 METERS | .555 | 3.89 | .9846 |
| 16-06 025 METERS | .369 | 4.09 | .9917 |
| 16-06 050 METERS | .122 | 4.37 | .9946 |
| 16-06 075 METERS | .137 | 4.83 | .9885 |
| 16-07 000 METERS | .388 | 4.15 | .9845 |
| 16-07 005 METERS | .455 | 4.09 | .9831 |
| 16-07 010 METERS | .952 | 3.89 | .9867 |
| 16-07 025 METERS | .236 | 4.28 | .9894 |
| 16-07 050 METERS | .093 | 4.21 | .9949 |
| 16-07 100 METERS | .335 | 4.95 | .9887 |

## NPGS COULTER COUNTER

For some stations the Coulter Counter belonging to the group from the NPG School was used. The effective range was from about 2 to 35 μm spherical equivalent diameter in twelve windows of logarithmically increasing particle volumes. The aperture was connected to a mercury monometer so that 3 ml of water were sampled. If it took much longer than 51 seconds to draw the 3 ml of sample the count was discarded and the sample rerun. The slopes are smaller because the size distribution is truncated at a smaller diameter and the larger particles have a steeper slope.

| SAMPLE | VOLUME | SLOPE | CORR. |
|---|---|---|---|
| 09-01 000 | .311 | 3.75 | .9950 |
| 09-01 050 | .098 | 3.83 | .9981 |
| 09-01 075 | .125 | 4.09 | .9857 |
| 09-01 090 | .106 | 3.71 | .9977 |
| 09-01 095 | .085 | 3.78 | .9926 |
| 09-01 100 | .135 | 3.81 | .9939 |
| 09-03 000 | .323 | 2.90 | .9920 |
| 09-03 005 | .405 | 3.16 | .9965 |
| 09-03 010 | .469 | 3.19 | .9951 |
| 09-03 025 | .204 | 3.72 | .9964 |
| 09-03 050 | .079 | 3.80 | .9896 |
| 09-03 085 | .113 | 4.14 | .9959 |
| 09-04 000 | .553 | 3.19 | .9943 |
| 09-04 005 | .789 | 3.03 | .9970 |
| 09-04 010 | .455 | 3.45 | .9978 |
| 09-04 015 | .117 | 3.59 | .9875 |

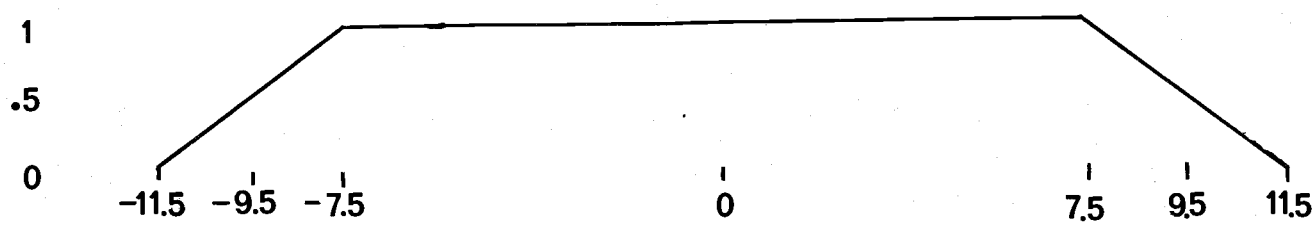
| SAMPLE | VOLUME | SLOPE | CORR. |
|---|---|---|---|
| 09-04 025 | .111 | 3.89 | .9878 |
| 09-04 055 | .240 | 4.53 | .9933 |
| 09-05 000 | .232 | 3.32 | .9922 |
| 09-05 005 | .348 | 3.11 | .9938 |
| 09-05 010 | .608 | 3.34 | .9915 |
| 09-05 015 | .690 | 3.30 | .9914 |
| 09-05 025 | .539 | 3.74 | .9987 |
| 09-06 000 | .303 | 3.03 | .9899 |
| 09-06 005 | .281 | 3.07 | .9901 |
| 09-06 010 | .952 | 2.84 | .9902 |
| 09-06 025 | 4.407 | 2.99 | .9800 |
| 09-07 000 | .419 | 3.00 | .9885 |
| 09-07 005 | .442 | 2.95 | .9913 |
| 09-07 010 | .492 | 3.02 | .9953 |
| 09-07 016 | 1.149 | 3.32 | .9932 |
| 09-08 000 | .411 | 3.25 | .9934 |
| 09-08 005 | .376 | 3.47 | .9974 |
| 09-08 010 | .480 | 3.26 | .9951 |
| 09-09 000 | .556 | 3.23 | .9890 |
| 09-09 005 | .596 | 3.12 | .9843 |
| 09-09 008 | .833 | 3.35 | .9892 |
| 11-02 000 | .652 | 3.23 | .9877 |
| 11-02 005 | .316 | 3.27 | .9964 |
| 11-02 010 | .357 | 3.04 | .9938 |
| 11-02 015 | .421 | 3.06 | .9923 |
| 11-02 FILT | .101 | 3.78 | .9975 |

| SAMPLE | VOLUME | SLOPE | CORR. |
|---|---|---|---|
| 14-04 010 | .264 | 3.62 | .9947 |
| 14-04 025 | .193 | 3.82 | .9936 |
| 14-04 050 | .101 | 4.06 | .9922 |
| 14-04 100 | .093 | 3.73 | .9958 |
| 14-05 000 | 1.185 | 2.86 | .9904 |
| 14-05 005 | 1.312 | 2.66 | .9938 |
| 14-05 010 | 1.269 | 3.17 | .9955 |
| 14-05 025 | .266 | 3.44 | .9961 |
| 14-05 050 | .098 | 4.27 | .9957 |
| 14-05 075 | .264 | 4.73 | .9962 |
| 14-06 000 | .569 | 3.05 | .9856 |
| 14-06 005 | .432 | 3.26 | .9929 |
| 14-06 010 | .613 | 3.13 | .9874 |
| 14-06 025 | .207 | 3.92 | .9952 |
| 14-06 050 | .173 | 4.11 | .9982 |

# SPECTRAL LIGHT SCATTERING DATA

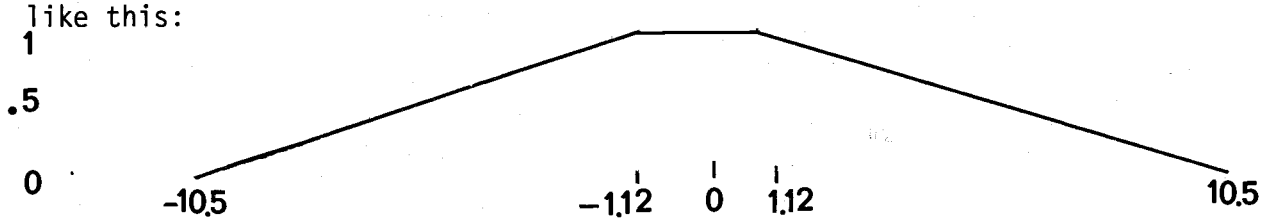
## CALIBRATION OF THE BRICE PHOENIX

The beam was measured to be 20 mm high at the center of the table; with the cell in, this would be reduced to about 19 mm. The main beam from the slits is 15 mm high and parallel. Therefore, we assume a beam geometry as follows:




The total area under the curve is $15 + \frac{1}{2}(4 + 4) = 19$.

For the given stops (Figure 19), the relative area of detection changes like this:




Therefore the integral of the radiant flux multiplied by the solid angle of detection is:

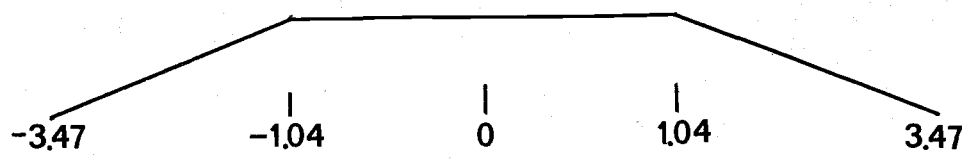
$$\frac{2Fw}{19}\left\{ \int_0^{1.12} dx + \int_{1.12}^{7.5} (1.119 - .1066x)\, dx + \int_{7.5}^{10.5} (2.88 - .25x)\,(1.119 - .1066x)\, dx \right\}$$

$$= Fw\,\{.1178 + .4429 + .0393\} = 0.6000\ Fw$$

where F is the total radiant flux in the beam and w is the solid angle of detection between heights of -1.12 and 1.12 mm.

The largest image on the curvette of the photocathode through the stops is 2.96 mm high by .712 mm wide. This is at a distance of 20 mm from the axis, so $w = \frac{2.96 \times .712}{20^2} = 5.27 \times 10^{-3}$ steradians.

From the stops (Figure 20) the relative area of detection in the horizontal direction changes as follows:




Thus, the effective length to use with the solid angle w is $\frac{2(3.47 + 1.04)}{2}$ = 4.51 mm.

To measure the sensitivity of the photomultiplier at 550 mm, an opal diffuser was placed in front of the beam slit. A Tektronix irradiance meter measured $1.40 \times 10^{-7}$ watts $cm^{-2}$ at a distance of 74 mm. Removing the D3 and D4 stops and inserting all four neutral density filters into the beam, the photomultiplier gave an output voltage of 0.286 volts. The D5 stop is 117 mm from the opal diffuser and has dimensions of 7.4 x 22 mm. The neutral density filter factors are .50, .25, .12 and .061. This gives an irradiance at D5 of $1.4 \times 10^{-7} \times .50 \times .25 \times .12 \times .061 \times \frac{74^2}{117^2}$ = $5.12 \times 10^{-11}$ watts $cm^{-2}$. Multiplied by the area of D5 gives $8.34 \times 10^{-11}$ watts at the detector. Dividing by the .286 volts gives a sensitivity of $2.92 \times 10^{-10}$ watts $volt^{-1}$.

Using a lens and the Tektronix, we found $.77 \times 10^{-4}$ watts in the beam. The lens was found to have a transmission of .98 so the actual power in the beam was $.79 \times 10^{-4}$ watts. Using distilled water and the working standard we got a zero degree reading of .0063 volts with all the filters in and .0056 volts at 45 degrees with no filters in. $\beta(45)$ for the distilled water is

$$\frac{.0056 \text{ volts } 2.92 \times 10^{-10} \frac{\text{watts}}{\text{volt}}}{(.600)\ 5.27 \times 10^{-3} \text{ steradians } \frac{.00451 \text{ m}}{\sin 45^\circ}\ .79 \times 10^{-4} \text{ watts}} = \frac{1.03 \times 10^{-3}}{\text{m steradians}}$$

The light source isn't stable but, by taking the zero degree reading every station we can correct for the fluctuation. Thus for light of 550 mm wavelength the calibration becomes

$$0.2592 \frac{R(\theta)}{f(\theta)} \frac{f(0)}{R(0)} \frac{.0063 \sin(\theta)}{9.15 \times 10^{-4}} = 1.785 \frac{R(\theta)}{R(0)} \frac{f(0)}{f(\theta)} \sin(\theta)$$

where R is the Brice Phoenix reading at $\theta$ and 0 degrees and f is the corresponding neutral density filter factors. 0.0063 and $9.15 \times 10^{-4}$ are the Brice Phoenix zero degree readings and filter factor when the beam measured $0.79 \times 10^{-4}$ watts.

Instead of going through this same procedure for each color, it was thought we could better define the spectral shape by determining the relative transmission of the working standard and using this to determine the relative sensitivity of the PM tube.

$$B_1(\theta) = \frac{R_1(\theta) \times P_{m1}}{L_1 \times f_1} \times G \sin\theta \quad B_2(\theta) = \frac{R_2(\theta) \times P_{m2}}{L_2 \times f_2} G \sin\theta$$

where $P_m$ is the photomultiplier sensitivity, L is the lamp output, f is the neutral density filter factor (still a function of wavelength, though), R is the Brice Phoenix reading and G is a geometry factor.

The photomultiplier sensitivity can be determined from the zero degree reading with the working standard.

$$P_{m1} = \frac{L_1 \times d_1 \times f_1(0)}{R_1(0)} \quad P_{m2} = \frac{L_2 \times d_2 \times f_2(0)}{R_2(0)}$$

where $d_1$ and $d_2$ are the filter factors for the working standard. With these substitutions we get

$$\frac{B_2(\theta)}{B_1(\theta)} = \frac{R_2(\theta)}{R_1(\theta)} \frac{R_1(0)}{R_2(0)} \frac{f_1}{f_2} \frac{f_2(0)}{f_1(0)} \frac{d_2}{d_1} .$$

If $B_1(\theta) = 1.785 \frac{R_1(\theta)}{R_1(0)} \frac{f_1(0)}{f_1} \sin\theta$ then

$$B_2(\theta) = 1.785 \frac{R_2(\theta)}{R_2(0)} \frac{f_2(0)}{f_2} \frac{d_2}{d_1} \sin\theta$$

The appropriate spectral values of the filter factors and the relative transmission of the working standard are given in Table VI.

Five percent of the 45° readings is subtracted from the 135° reading to account for scattering from the reflected main beam.

TABLE VI

filter

| Wavelength | | | | |
|---|---|---|---|---|
| 400 | .467 | .213 | .101 | .0420 |
| 450 | .483 | .235 | .115 | .0550 |
| 500 | .500 | .246 | .117 | .0577 |
| 550 | .500 | .250 | .120 | .0610 |
| 600 | .459 | .230 | .102 | .0557 |

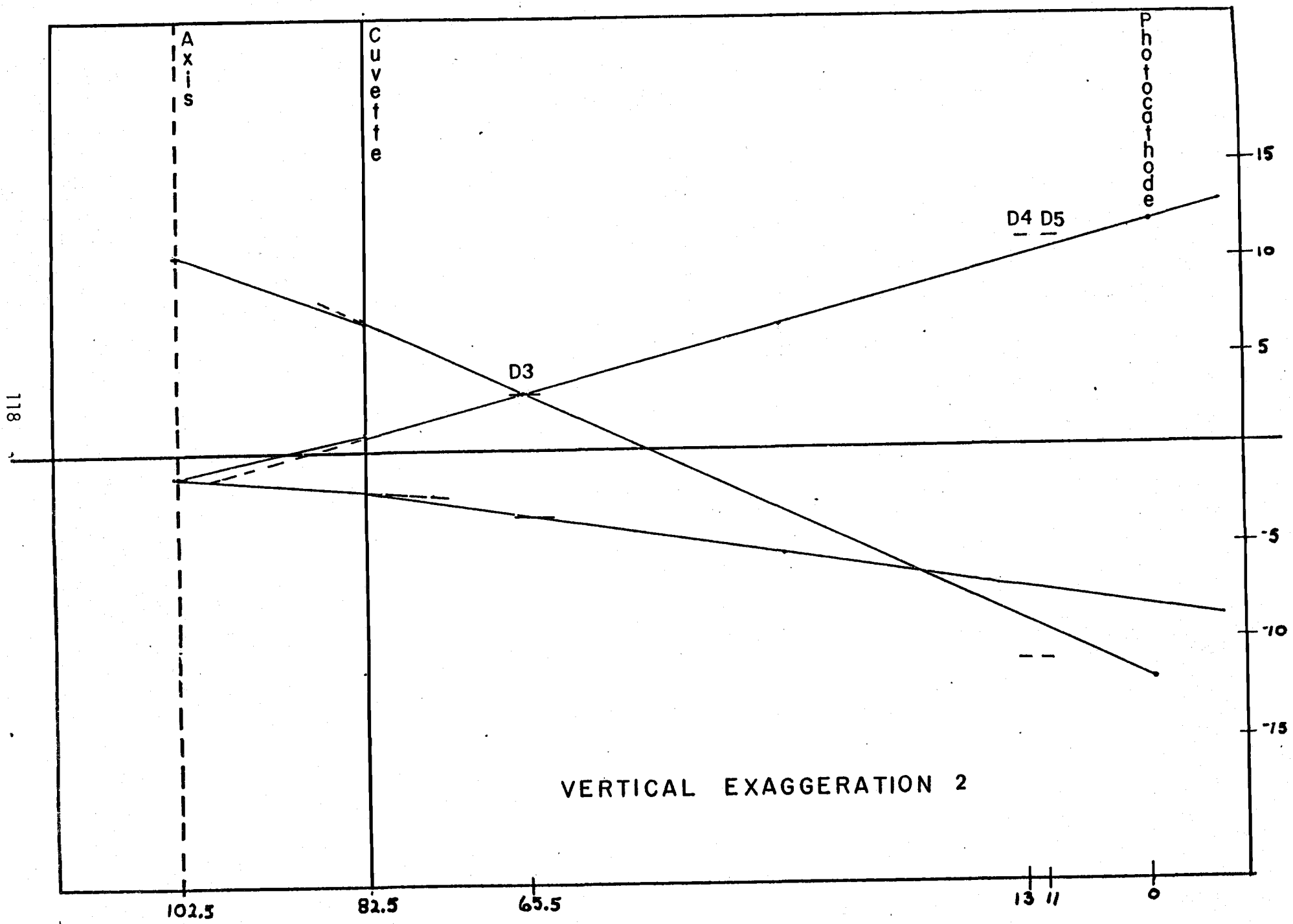
relative transmission of working standard

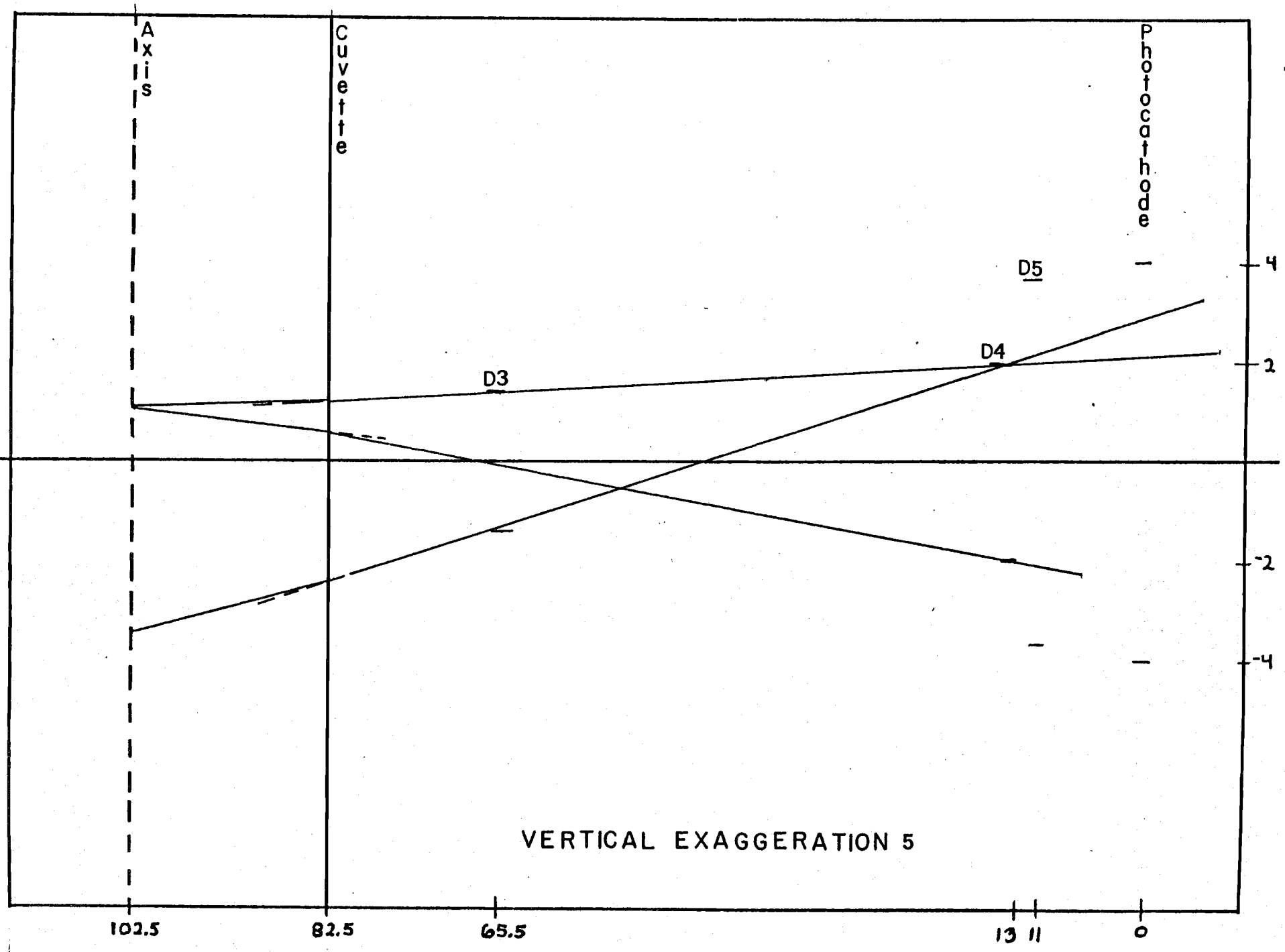
| Wavelength | |
|---|---|
| 400 | .595 |
| 450 | .800 |
| 500 | .933 |
| 550 | 1.000 |
| 600 | .990 |

The scattering data is presented as follows:

Sample ID - a four digit station number followed by the depth in meters.

$\beta 45$, $\beta 90$, $\beta 135$ - the volume scattering function x $10^5$at 45, 90 and 135° respecitvely in units $m^{-1}$ $ster^{-1}$. These are given for four different wavelengths as indicated above each set of three columns. A zero indicates no data.


Axis
Cuvette
Photocathode
D4 D5
D3
15
10
5
-5
-10
-15
VERTICAL EXAGGERATION 2
102.5
82.5
65.5
13
11
0


Axis
Cuvette
Photocathode
D5
D4
D3
4
2
-2
-4
VERTICAL EXAGGERATION 5
102.5
82.5
65.5
13
11
0

CRUISE NASA1 MAY 1977

| SAMPLE ID | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | | 600 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 345 | 390 | 3135 | 345 | 390 | 3135 | 345 | 390 | 3135 | 345 | 390 | 3135 |
| | | | | | | VOLUME SCATTERING FUNCTION * 100000 | | | | | | | | |
| 03 | 01 | 0 | 1161 | 173 | 214 | 1117 | 146 | 192 | 911 | 112 | 141 | 896 | 0 | 105 |
| 03 | 01 | 5 | 0 | 159 | 256 | 1075 | 146 | 194 | 895 | 107 | 156 | 896 | 106 | 105 |
| 03 | 01 | 10 | 451 | 159 | 249 | 455 | 146 | 225 | 401 | 107 | 158 | 373 | 106 | 131 |
| 03 | 01 | 20 | 1444 | 170 | 176 | 1303 | 146 | 141 | 1096 | 114 | 119 | 970 | 106 | 101 |
| 03 | 02 | 0 | 3231 | 447 | 9 | 3132 | 403 | 0 | 3163 | 169 | 26 | 3012 | 328 | 236 |
| 03 | 02 | 5 | 1974 | 250 | 213 | 1958 | 374 | 188 | 1771 | 190 | 143 | 1853 | 219 | 139 |
| 03 | 02 | 10 | 1231 | 174 | 178 | 1265 | 144 | 161 | 1108 | 126 | 114 | 1159 | 109 | 96 |
| 03 | 02 | 20 | 1248 | 185 | 162 | 1360 | 172 | 136 | 1108 | 133 | 107 | 1081 | 109 | 101 |
| 03 | 03 | 0 | 4832 | 403 | 301 | 4179 | 356 | 334 | 4355 | 321 | 237 | 4365 | 325 | 143 |
| 03 | 03 | 5 | 1943 | 250 | 235 | 2057 | 219 | 208 | 2024 | 228 | 165 | 1931 | 219 | 135 |
| 03 | 03 | 10 | 1471 | 217 | 212 | 1455 | 219 | 179 | 1351 | 160 | 141 | 1390 | 109 | 95 |
| 03 | 04 | 0 | 4587 | 573 | 396 | 4533 | 466 | 352 | 3859 | 419 | 308 | 4394 | 452 | 260 |
| 03 | 04 | 5 | 3361 | 400 | 294 | 3695 | 408 | 249 | 3352 | 348 | 184 | 3515 | 452 | 144 |
| 03 | 05 | 0 | 3836 | 503 | 251 | 4079 | 384 | 214 | 3479 | 321 | 167 | 3814 | 360 | 233 |
| 03 | 05 | 5 | 3766 | 480 | 327 | 3680 | 472 | 297 | 2331 | 369 | 261 | 3221 | 360 | 263 |
| 03 | 05 | 8 | 5021 | 670 | 398 | 4590 | 649 | 398 | 4112 | 509 | 288 | 4322 | 430 | 292 |
| 03 | 06 | 0 | 2959 | 393 | 308 | 2856 | 374 | 286 | 2347 | 333 | 234 | 2684 | 335 | 261 |
| 03 | 06 | 3 | 2631 | 316 | 255 | 2570 | 317 | 218 | 2411 | 256 | 153 | 2526 | 335 | 190 |
| 03 | 06 | 8 | 2663 | 360 | 261 | 2611 | 374 | 217 | 2315 | 315 | 166 | 2763 | 335 | 178 |
| 03 | 06 | 13 | 2493 | 348 | 292 | 2489 | 374 | 283 | 2090 | 300 | 227 | 1974 | 335 | 296 |
| 03 | 06 | 15 | 1906 | 327 | 252 | 1358 | 259 | 229 | 1801 | 204 | 172 | 1815 | 224 | 225 |
| 03 | 07 | 0 | 1139 | 158 | 231 | 1240 | 166 | 194 | 1029 | 117 | 154 | 997 | 202 | 164 |
| 03 | 07 | 5 | 1142 | 158 | 159 | 1161 | 165 | 139 | 1029 | 117 | 95 | 997 | 101 | 93 |
| 03 | 07 | 10 | 1096 | 132 | 117 | 984 | 139 | 108 | 867 | 109 | 75 | 855 | 202 | 100 |
| 03 | 07 | 20 | 1343 | 178 | 149 | 1338 | 194 | 130 | 1176 | 140 | 95 | 1053 | 202 | 160 |
| 03 | 08 | 0 | 1133 | 147 | 156 | 1223 | 153 | 155 | 1068 | 103 | 114 | 1013 | 96 | 153 |
| 03 | 08 | 5 | 959 | 138 | 134 | 1043 | 153 | 127 | 937 | 105 | 59 | 853 | 96 | 92 |
| 03 | 08 | 10 | 1108 | 157 | 179 | 1187 | 153 | 157 | 1068 | 131 | 132 | 1087 | 96 | 149 |
| 03 | 08 | 25 | 1189 | 184 | 254 | 1223 | 178 | 515 | 1211 | 143 | 182 | 1223 | 132 | 211 |
| 04 | 01 | 0 | 2100 | 358 | 247 | 2129 | 295 | 217 | 1929 | 266 | 171 | 1344 | 302 | 191 |
| 04 | 01 | 5 | 2100 | 255 | 259 | 2167 | 242 | 234 | 1635 | 193 | 193 | 1915 | 402 | 259 |
| 04 | 01 | 10 | 1373 | 198 | 220 | 1387 | 188 | 178 | 1231 | 161 | 120 | 1276 | 201 | 149 |
| 04 | 01 | 15 | 2663 | 407 | 276 | 2737 | 349 | 243 | 2277 | 287 | 192 | 2340 | 302 | 237 |
| 04 | 02 | 0 | 3820 | 428 | 286 | 3979 | 452 | 317 | 3579 | 350 | 211 | 3385 | 369 | 221 |
| 04 | 02 | 4 | 4633 | 576 | 334 | 4774 | 653 | 402 | 3951 | 530 | 346 | 3941 | 554 | 323 |
| 04 | 02 | 7 | 2267 | 289 | 240 | 2598 | 302 | 226 | 2516 | 237 | 156 | 2096 | 276 | 131 |
| 04 | 03 | 0 | 2293 | 315 | 195 | 2242 | 292 | 216 | 2065 | 243 | 158 | 2064 | 266 | 147 |
| 04 | 03 | 5 | 2214 | 323 | 193 | 1897 | 292 | 216 | 1706 | 207 | 172 | 1751 | 266 | 183 |
| 04 | 03 | 10 | 1661 | 236 | 177 | 1724 | 243 | 155 | 1522 | 207 | 123 | 1802 | 175 | 113 |
| 04 | 03 | 15 | 2293 | 315 | 220 | 2276 | 316 | 197 | 1953 | 249 | 178 | 2064 | 266 | 147 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 451 NANOMETERS 845 | 390 | 3135 | 500 NANOMETERS 845 | 390 | 3135 | 550 NANOMETERS 845 | 390 | 3135 | 600 NANOMETERS 845 | 390 | 3135 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | |
| 04 04 0 | 2242 | 306 | 231 | 2349 | 302 | 238 | 2293 | 242 | 174 | 2216 | 285 | 225 |
| 04 04 2 | 3209 | 376 | 243 | 3096 | 452 | 255 | 2963 | 350 | 207 | 2086 | 380 | 201 |
| 04 04 8 | 2074 | 0 | 212 | 2024 | 0 | 237 | 1901 | 0 | 166 | 2216 | 0 | 225 |
| 04 04 13 | 1603 | 236 | 198 | 1703 | 226 | 199 | 1622 | 174 | 147 | 1746 | 191 | 151 |
| 04 05 0 | 2314 | 356 | 263 | 2424 | 289 | 255 | 2481 | 280 | 167 | 2349 | 269 | 200 |
| 04 05 5 | 2450 | 303 | 131 | 2253 | 337 | 195 | 2205 | 247 | 141 | 2476 | 269 | 130 |
| 04 05 8 | 2673 | 428 | 233 | 2731 | 386 | 222 | 2481 | 336 | 213 | 2223 | 360 | 206 |
| 04 06 0 | 2674 | 297 | 331 | 2614 | 299 | 276 | 2395 | 247 | 5302 | 2513 | 267 | 185 |
| 04 06 5 | 2456 | 315 | 243 | 2721 | 299 | 217 | 2481 | 280 | 167 | 2387 | 267 | 132 |
| 04 06 8 | 2510 | 367 | 246 | 2721 | 349 | 253 | 2481 | 269 | 193 | 2262 | 356 | 201 |
| 05 01 0 | 1029 | 148 | 147 | 1227 | 158 | 143 | 1055 | 126 | 107 | 1097 | 104 | 92 |
| 05 01 5 | 883 | 124 | 114 | 985 | 131 | 119 | 912 | 95 | 92 | 873 | 104 | 102 |
| 05 01 10 | 714 | 107 | 133 | 836 | 105 | 126 | 741 | 83 | 101 | 731 | 104 | 110 |
| 05 01 20 | 565 | 107 | 130 | 743 | 105 | 130 | 670 | 78 | 91 | 731 | 104 | 110 |
| 05 01 40 | 563 | 99 | 147 | 613 | 105 | 155 | 535 | 81 | 118 | 512 | 104 | 120 |
| 05 01 60 | 532 | 91 | 120 | 532 | 105 | 117 | 527 | 65 | 84 | 585 | 104 | 117 |
| 05 02 0 | 974 | 138 | 135 | 995 | 140 | 116 | 926 | 105 | 82 | 872 | 88 | 81 |
| 05 02 5 | 1122 | 153 | 139 | 1193 | 164 | 123 | 1078 | 126 | 97 | 1121 | 88 | 131 |
| 05 02 10 | 1022 | 146 | 127 | 1028 | 140 | 131 | 977 | 116 | 91 | 1059 | 88 | 72 |
| 05 02 20 | 950 | 138 | 136 | 1011 | 140 | 115 | 951 | 112 | 85 | 934 | 88 | 78 |
| 05 02 40 | 562 | 97 | 109 | 630 | 94 | 101 | 546 | 72 | 76 | 561 | 88 | 96 |
| 05 02 60 | 820 | 114 | 114 | 895 | 117 | 105 | 850 | 86 | 67 | 934 | 88 | 78 |
| 05 03 0 | 995 | 133 | 111 | 995 | 130 | 103 | 914 | 106 | 75 | 935 | 78 | 63 |
| 05 03 5 | 1059 | 156 | 140 | 1055 | 139 | 131 | 914 | 116 | 95 | 580 | 78 | 121 |
| 05 03 15 | 1003 | 164 | 121 | 995 | 151 | 103 | 903 | 114 | 65 | 860 | 78 | 86 |
| 05 03 25 | 833 | 140 | 127 | 913 | 130 | 122 | 821 | 101 | 83 | 770 | 78 | 72 |
| 05 04 0 | 2071 | 246 | 204 | 1782 | 247 | 181 | 1625 | 189 | 144 | 1536 | 242 | 151 |
| 05 04 5 | 2173 | 306 | 204 | 1973 | 269 | 204 | 1777 | 245 | 153 | 1709 | 242 | 184 |
| 05 04 10 | 1806 | 238 | 167 | 1750 | 224 | 135 | 1574 | 170 | 114 | 1709 | 161 | 142 |
| 05 04 18 | 1973 | 221 | 166 | 1814 | 173 | 132 | 1497 | 131 | 103 | 1481 | 161 | 97 |
| 05 05 0 | 3201 | 386 | 193 | 3301 | 374 | 183 | 2316 | 291 | 166 | 2510 | 323 | 159 |
| 05 05 5 | 2836 | 353 | 230 | 2929 | 328 | 289 | 2502 | 291 | 230 | 2262 | 246 | 235 |
| 05 05 10 | 3096 | 353 | 203 | 2950 | 398 | 167 | 2502 | 300 | 147 | 2436 | 323 | 168 |
| 05 05 18 | 2676 | 319 | 379 | 2685 | 304 | 347 | 2711 | 243 | 258 | 2436 | 246 | 234 |
| 05 06 0 | 2833 | 328 | 293 | 2695 | 321 | 303 | 2247 | 277 | 269 | 2416 | 270 | 261 |
| 05 06 5 | 3621 | 412 | 266 | 3020 | 436 | 271 | 2801 | 349 | 253 | 3182 | 360 | 223 |
| 05 06 8 | 2830 | 395 | 0 | 3234 | 367 | 0 | 2854 | 335 | 0 | 3372 | 360 | 0 |
| 05 07 0 | 3669 | 476 | 480 | 3394 | 499 | 434 | 3053 | 371 | 484 | 2878 | 354 | 419 |
| 05 07 5 | 4435 | 513 | 377 | 4743 | 474 | 328 | 4320 | 429 | 240 | 4378 | 443 | 213 |
| 05 07 8 | 4717 | 452 | 353 | 4455 | 624 | 379 | 4492 | 505 | 356 | 4691 | 532 | 328 |

CRUISE NASA1 MAY 1977

| SAMPLE | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | | 600 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | | | | | | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | |
| 06 | 01 | 0 | 3820 | 466 | 232 | 3833 | 437 | 250 | 3453 | 393 | 207 | 2974 | 383 | 176 |
| 06 | 01 | 4 | 3502 | 503 | 315 | 3533 | 520 | 295 | 3357 | 405 | 242 | 3190 | 383 | 219 |
| 06 | 01 | 7 | 4965 | 633 | 350 | 4971 | 586 | 355 | 5046 | 603 | 314 | 4758 | 536 | 302 |
| 06 | 02 | 0 | 3093 | 437 | 274 | 3114 | 437 | 271 | 2869 | 304 | 260 | 2541 | 383 | 251 |
| 06 | 02 | 5 | 3093 | 371 | 243 | 3234 | 374 | 265 | 3265 | 318 | 229 | 2866 | 307 | 451 |
| 06 | 02 | 10 | 4275 | 539 | 70 | 4193 | 582 | 350 | 4156 | 486 | 279 | 3623 | 459 | 251 |
| 06 | 03 | 0 | 3411 | 359 | 305 | 3275 | 301 | 277 | 2918 | 260 | 198 | 2905 | 312 | 190 |
| 06 | 03 | 5 | 3655 | 452 | 282 | 3332 | 439 | 264 | 3503 | 339 | 211 | 3190 | 779 | 225 |
| 06 | 03 | 10 | 4093 | 499 | 286 | 3956 | 494 | 289 | 4452 | 427 | 193 | 4235 | 390 | 173 |
| 06 | 03 | 20 | 3893 | 445 | 276 | 4339 | 430 | 252 | 5352 | 386 | 101 | 5390 | 390 | 115 |
| 06 | 04 | 0 | 6258 | 908 | 520 | 6331 | 860 | 496 | 4674 | 773 | 622 | 5116 | 682 | 456 |
| 06 | 04 | 5 | 5483 | 620 | 357 | 5228 | 646 | 399 | 5543 | 570 | 336 | 5507 | 597 | 266 |
| 06 | 04 | 15 | 2956 | 387 | 297 | 2709 | 382 | 271 | 2717 | 299 | 230 | 3491 | 341 | 136 |
| 06 | 05 | 0 | 4939 | 688 | 534 | 4743 | 693 | 490 | 4456 | 580 | 371 | 4033 | 597 | 400 |
| 06 | 05 | 5 | 4723 | 623 | 343 | 4955 | 597 | 328 | 4134 | 497 | 254 | 3792 | 511 | 292 |
| 06 | 05 | 10 | 4339 | 723 | 433 | 4955 | 717 | 379 | 4837 | 561 | 319 | 4394 | 511 | 322 |
| 06 | 05 | 20 | 3223 | 421 | 278 | 3183 | 382 | 264 | 2939 | 313 | 216 | 2589 | 341 | 217 |
| 06 | 05 | 0 | 3141 | 420 | 282 | 3183 | 406 | 264 | 2696 | 331 | 214 | 2763 | 341 | 223 |
| 06 | 06 | 5 | 3553 | 495 | 138 | 3509 | 502 | 163 | 3066 | 412 | 120 | 2829 | 426 | 159 |
| 06 | 06 | 10 | 2522 | 321 | 254 | 2370 | 311 | 289 | 2696 | 264 | 152 | 2648 | 256 | 169 |
| 06 | 06 | 20 | 3737 | 478 | 294 | 3646 | 473 | 326 | 3171 | 420 | 265 | 2950 | 426 | 274 |
| 06 | 06 | 30 | 2214 | 313 | 228 | 2065 | 334 | 236 | 2220 | 260 | 152 | 1986 | 256 | 202 |
| 06 | 07 | 0 | 1630 | 265 | 207 | 1542 | 275 | 183 | 1470 | 178 | 150 | 1370 | 162 | 503 |
| 06 | 07 | 5 | 1813 | 205 | 152 | 1796 | 206 | 138 | 1646 | 163 | 100 | 1713 | 243 | 86 |
| 06 | 07 | 10 | 1499 | 240 | 204 | 1331 | 206 | 177 | 1037 | 159 | 146 | 1069 | 162 | 174 |
| 06 | 07 | 20 | 1344 | 172 | 146 | 1299 | 160 | 130 | 1249 | 133 | 103 | 1313 | 162 | 106 |
| 06 | 07 | 40 | 1502 | 231 | 217 | 1461 | 206 | 186 | 1415 | 166 | 146 | 1256 | 162 | 166 |
| 06 | 07 | 50 | 1344 | 163 | 140 | 1331 | 160 | 112 | 1235 | 122 | 79 | 1242 | 162 | 37 |
| 06 | 08 | 0 | 1731 | 252 | 224 | 1591 | 246 | 282 | 1420 | 195 | 158 | 1300 | 167 | 113 |
| 06 | 08 | 5 | 1542 | 227 | 203 | 1708 | 246 | 193 | 1474 | 177 | 152 | 1713 | 167 | 92 |
| 06 | 08 | 10 | 1647 | 218 | 168 | 1708 | 221 | 159 | 1447 | 179 | 88 | 1300 | 167 | 113 |
| 06 | 08 | 20 | 1242 | 185 | 182 | 1202 | 172 | 184 | 1099 | 139 | 132 | 945 | 84 | 130 |
| 06 | 08 | 40 | 691 | 118 | 133 | 714 | 99 | 104 | 592 | 80 | 69 | 591 | 84 | 88 |
| 06 | 08 | 55 | 1417 | 227 | 173 | 1586 | 197 | 165 | 1340 | 163 | 123 | 1241 | 167 | 115 |
| 06 | 09 | 0 | 1269 | 159 | 167 | 1241 | 157 | 149 | 1092 | 142 | 107 | 996 | 93 | 126 |
| 06 | 09 | 5 | 1439 | 198 | 162 | 1511 | 179 | 196 | 1320 | 151 | 18 | 1347 | 156 | 109 |
| 06 | 09 | 10 | 1096 | 151 | 176 | 1113 | 135 | 151 | 990 | 122 | 57 | 1258 | 83 | 53 |
| 06 | 09 | 20 | 851 | 127 | 132 | 986 | 113 | 110 | 867 | 99 | 84 | 937 | 581 | 70 |
| 06 | 09 | 40 | 422 | 71 | 120 | 382 | 45 | 108 | 341 | 52 | 51 | 351 | 0 | 41 |
| 06 | 09 | 60 | 764 | 135 | 136 | 795 | 113 | 120 | 814 | 93 | 76 | 644 | 93 | 85 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | | 600 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | | | | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | |
| 06 10 0 | 677 | 103 | 140 | 700 | 90 | 124 | 590 | 74 | 94 | 552 | 78 | 83 |
| 06 10 5 | 523 | 111 | 139 | 823 | 113 | 118 | 706 | 80 | 91 | 718 | 78 | 75 |
| 06 10 10 | 1290 | 166 | 144 | 1353 | 135 | 123 | 1111 | 110 | 18 | 939 | 73 | 63 |
| 06 10 20 | 823 | 119 | 122 | 843 | 90 | 101 | 730 | 74 | 69 | 773 | 78 | 72 |
| 06 10 40 | 543 | 88 | 130 | 510 | 68 | 102 | 393 | 57 | 81 | 386 | 0 | 36 |
| 06 10 60 | 383 | 71 | 94 | 350 | 45 | 78 | 239 | 39 | 55 | 607 | 0 | 25 |
| 06 11 0 | 410 | 74 | 95 | 412 | 62 | 82 | 434 | 49 | 53 | 331 | 0 | 39 |
| 06 11 5 | 410 | 67 | 95 | 427 | 62 | 81 | 343 | 49 | 64 | 386 | 0 | 36 |
| 06 11 10 | 435 | 111 | 125 | 457 | 187 | 169 | 400 | 58 | 66 | 386 | 78 | 146 |
| 06 11 20 | 750 | 119 | 146 | 751 | 104 | 169 | 731 | 81 | 83 | 773 | 78 | 72 |
| 06 11 40 | 827 | 119 | 127 | 854 | 104 | 105 | 915 | 91 | 67 | 828 | 78 | 69 |
| 06 11 60 | 522 | 104 | 115 | 530 | 104 | 106 | 491 | 81 | 70 | 497 | 78 | 86 |
| 07 01 0 | 962 | 134 | 137 | 915 | 89 | 112 | 834 | 88 | 74 | 836 | 0 | 18 |
| 07 01 5 | 1134 | 143 | 152 | 994 | 133 | 124 | 858 | 109 | 94 | 956 | 85 | 12 |
| 07 01 10 | 1147 | 151 | 163 | 1057 | 112 | 137 | 941 | 105 | 107 | 1016 | 0 | 68 |
| 07 01 20 | 814 | 109 | 138 | 742 | 89 | 89 | 606 | 63 | 71 | 657 | 0 | 27 |
| 07 01 40 | 631 | 109 | 120 | 631 | 67 | 79 | 537 | 64 | 72 | 597 | 0 | 29 |
| 07 01 60 | 655 | 109 | 115 | 536 | 67 | 115 | 491 | 58 | 66 | 537 | 85 | 33 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 345 | 390 | 3135 | 345 | 390 | 3135 | 345 | 390 | 3135 | 345 | 390 | 3135 |
| | | | | VOLUME SCATTERING FUNCTION * 100000 | | | | | | | | |
| 09 01 0 | 914 | 120 | 89 | 417 | 61 | 43 | 0 | 0 | 0 | 435 | 83 | 84 |
| 09 01 5 | 1210 | 186 | 30 | 1123 | 143 | 131 | 1031 | 143 | 127 | 968 | 107 | 81 |
| 09 01 10 | 1231 | 206 | 202 | 1091 | 165 | 170 | 1126 | 148 | 154 | 1200 | 127 | 95 |
| 09 01 20 | 1211 | 191 | 184 | 962 | 159 | 150 | 945 | 148 | 133 | 913 | 106 | 101 |
| 09 01 40 | 1048 | 186 | 164 | 918 | 151 | 136 | 871 | 148 | 121 | 800 | 104 | 77 |
| 09 01 60 | 1934 | 291 | 219 | 1929 | 225 | 175 | 2072 | 233 | 317 | 1717 | 179 | 112 |
| 09 01 100 | 2171 | 291 | 228 | 1882 | 233 | 199 | 1771 | 233 | 242 | 1905 | 179 | 120 |
| 09 02 0 | 1263 | 191 | 186 | 1127 | 154 | 141 | 1117 | 151 | 143 | 1037 | 120 | 107 |
| 09 02 5 | 1551 | 226 | 139 | 1349 | 183 | 165 | 1423 | 172 | 199 | 1374 | 147 | 114 |
| 09 02 10 | 1350 | 211 | 196 | 1216 | 191 | 158 | 1315 | 194 | 148 | 1327 | 153 | 101 |
| 09 02 20 | 1447 | 211 | 191 | 1261 | 176 | 166 | 1431 | 194 | 143 | 1350 | 139 | 106 |
| 09 03 0 | 1512 | 211 | 157 | 1433 | 183 | 136 | 1558 | 187 | 121 | 1389 | 141 | 107 |
| 09 03 5 | 1464 | 202 | 133 | 1389 | 175 | 156 | 1458 | 187 | 159 | 1312 | 148 | 129 |
| 09 03 10 | 1317 | 226 | 239 | 1389 | 198 | 201 | 1359 | 211 | 214 | 1209 | 166 | 153 |
| 09 03 20 | 1317 | 197 | 187 | 1438 | 165 | 153 | 1233 | 164 | 167 | 1184 | 133 | 129 |
| 09 04 0 | 2333 | 320 | 46 | 2876 | 381 | 172 | 2933 | 325 | 199 | 2156 | 252 | 184 |
| 09 04 5 | 2159 | 276 | 221 | 1836 | 223 | 201 | 1856 | 211 | 133 | 1852 | 243 | 123 |
| 09 04 10 | 1742 | 246 | 211 | 1587 | 238 | 152 | 1723 | 234 | 179 | 1645 | 170 | 131 |
| 09 04 20 | 1545 | 221 | 164 | 1538 | 198 | 159 | 1658 | 211 | 133 | 1543 | 174 | 120 |
| 09 05 0 | 4354 | 807 | 426 | 5779 | 612 | 294 | 4852 | 540 | 378 | 4554 | 613 | 340 |
| 09 05 5 | 5105 | 753 | 435 | 4968 | 740 | 369 | 4354 | 821 | 334 | 3563 | 680 | 400 |
| 09 05 10 | 2843 | 442 | 313 | 2530 | 357 | 262 | 2356 | 346 | 254 | 2171 | 294 | 227 |
| 09 05 20 | 2548 | 372 | 267 | 2878 | 318 | 222 | 2985 | 302 | 224 | 2508 | 277 | 146 |
| 09 06 0 | 5103 | 296 | 0 | 4564 | 516 | 0 | 3918 | 518 | 0 | 3762 | 449 | 0 |
| 10 01 0 | 10338 | 1323 | 854 | 8422 | 1059 | 704 | 8781 | 824 | 563 | 9003 | 851 | 476 |
| 10 01 5 | 10135 | 1535 | 1029 | 8193 | 1292 | 782 | 9012 | 1206 | 756 | 9003 | 1108 | 700 |
| 10 01 6 | 8850 | 1299 | 931 | 6942 | 1126 | 791 | 6682 | 976 | 756 | 7244 | 920 | 563 |
| 10 02 0 | 10216 | 1515 | 762 | 8550 | 1169 | 719 | 10336 | 1228 | 520 | 9095 | 1119 | 522 |
| 10 02 5 | 7662 | 968 | 648 | 7745 | 921 | 464 | 5933 | 944 | 503 | 5603 | 821 | 408 |
| 10 02 10 | 3846 | 463 | 304 | 2982 | 372 | 269 | 2911 | 378 | 239 | 2696 | 340 | 239 |
| 10 02 15 | 7455 | 1023 | 535 | 5815 | 833 | 490 | 7363 | 968 | 443 | 7400 | 833 | 379 |
| 10 03 0 | 13933 | 1195 | 447 | 7745 | 971 | 408 | 7863 | 1157 | 410 | 7823 | 1137 | 370 |
| 10 03 5 | 4427 | 501 | 430 | 5093 | 420 | 296 | 5167 | 401 | 277 | 3489 | 353 | 276 |
| 10 03 10 | 2935 | 395 | 297 | 2627 | 347 | 218 | 2576 | 401 | 189 | 2749 | 322 | 141 |
| 10 03 15 | 2614 | 406 | 385 | 2527 | 356 | 263 | 2844 | 331 | 226 | 2749 | 304 | 179 |
| 10 04 0 | 8491 | 828 | 591 | 7850 | 749 | 431 | 7906 | 824 | 459 | 6931 | 777 | 505 |
| 10 04 5 | 8394 | 1219 | 703 | 7162 | 951 | 652 | 6347 | 1148 | 705 | 6613 | 1011 | 582 |
| 10 04 10 | 3047 | 469 | 413 | 2657 | 399 | 325 | 3306 | 439 | 265 | 2866 | 443 | 240 |
| 10 04 20 | 2227 | 336 | 319 | 2018 | 281 | 243 | 2121 | 275 | 212 | 2094 | 224 | 159 |
| 10 05 0 | 5355 | 650 | 490 | 5426 | 578 | 390 | 5237 | 574 | 455 | 5512 | 506 | 347 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 345 | 390 | 3135 | 345 | 390 | 3135 | 345 | 390 | 3135 | 345 | 390 | 3135 |
| | | | | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | |
| 10 05 5 | 6427 | 342 | 436 | 5968 | 604 | 351 | 4988 | 724 | 405 | 4410 | 603 | 203 |
| 10 05 10 | 2617 | 364 | 335 | 2306 | 281 | 258 | 2510 | 300 | 246 | 2440 | 272 | 216 |
| 10 05 20 | 1954 | 331 | 327 | 1718 | 272 | 301 | 2121 | 250 | 389 | 1518 | 193 | 182 |
| 10 06 0 | 1635 | 224 | 255 | 1383 | 191 | 193 | 865 | 104 | 104 | 1368 | 152 | 155 |
| 10 06 5 | 1629 | 243 | 216 | 1425 | 191 | 152 | 848 | 104 | 68 | 1368 | 148 | 117 |
| 10 06 10 | 1908 | 274 | 237 | 1445 | 205 | 175 | 837 | 115 | 94 | 1458 | 167 | 134 |
| 10 06 20 | 1553 | 237 | 226 | 1342 | 178 | 176 | 732 | 92 | 83 | 1346 | 135 | 113 |
| 10 06 40 | 743 | 140 | 178 | 663 | 96 | 127 | 342 | 46 | 56 | 560 | 70 | 78 |
| 10 06 60 | 2576 | 350 | 291 | 2266 | 295 | 226 | 1305 | 150 | 114 | 2109 | 220 | 147 |
| 10 07 0 | 2323 | 300 | 266 | 1926 | 227 | 207 | 2065 | 208 | 191 | 1643 | 163 | 133 |
| 10 07 5 | 2844 | 367 | 318 | 2408 | 302 | 225 | 2550 | 390 | 221 | 2346 | 192 | 142 |
| 10 07 10 | 2443 | 334 | 260 | 1825 | 252 | 206 | 2337 | 260 | 267 | 1929 | 197 | 132 |
| 10 07 20 | 2403 | 311 | 270 | 1976 | 235 | 211 | 2175 | 234 | 186 | 1877 | 190 | 125 |
| 10 07 40 | 1739 | 277 | 260 | 1546 | 202 | 191 | 1586 | 182 | 142 | 1303 | 154 | 32 |
| 10 07 60 | 3845 | 606 | 456 | 3568 | 479 | 328 | 3748 | 469 | 310 | 3076 | 380 | 55 |
| 10 08 0 | 5601 | 558 | 406 | 4617 | 528 | 341 | 4080 | 440 | 251 | 3859 | 349 | 219 |
| 10 08 5 | 4436 | 504 | 406 | 5097 | 480 | 289 | 3870 | 440 | 234 | 3013 | 358 | 237 |
| 10 08 10 | 3071 | 368 | 312 | 2548 | 317 | 267 | 2596 | 269 | 182 | 2061 | 211 | 170 |
| 10 08 20 | 2145 | 339 | 302 | 1998 | 278 | 254 | 1713 | 220 | 209 | 1533 | 181 | 167 |
| 10 08 40 | 4081 | 552 | 477 | 3838 | 471 | 411 | 3248 | 391 | 302 | 3119 | 345 | 250 |
| 10 09 0 | 4054 | 547 | 392 | 3621 | 555 | 308 | 3448 | 431 | 295 | 3483 | 403 | 282 |
| 10 09 5 | 3657 | 425 | 1739 | 3463 | 370 | 1652 | 2335 | 407 | 1653 | 2907 | 362 | 1626 |
| 10 09 10 | 3123 | 468 | 389 | 2781 | 403 | 314 | 3334 | 479 | 323 | 3013 | 349 | 237 |
| 10 09 20 | 2714 | 330 | 290 | 2524 | 266 | 226 | 2945 | 239 | 173 | 2960 | 242 | 140 |
| 10 10 0 | 8534 | 1108 | 754 | 7313 | 980 | 596 | 6948 | 1078 | 561 | 6231 | 936 | 430 |
| 10 10 5 | 6267 | 777 | 2234 | 6156 | 637 | 2136 | 5175 | 593 | 2105 | 5413 | 663 | 2205 |
| 10 10 10 | 4047 | 494 | 426 | 3696 | 410 | 325 | 3917 | 462 | 349 | 3801 | 351 | 308 |
| 10 10 20 | 2457 | 369 | 342 | 2037 | 309 | 269 | 2218 | 385 | 271 | 2189 | 237 | 188 |
| 11 01 0 | 7552 | 500 | 872 | 7806 | 490 | 763 | 7114 | 917 | 753 | 6670 | 867 | 0 |
| 11 01 5 | 6823 | 912 | 514 | 5189 | 830 | 332 | 6527 | 866 | 413 | 6431 | 743 | 359 |
| 11 01 10 | 4054 | 522 | 375 | 3874 | 507 | 333 | 3836 | 484 | 275 | 3800 | 445 | 217 |
| 11 01 15 | 3619 | 537 | 413 | 3929 | 454 | 342 | 3658 | 407 | 304 | 3800 | 391 | 245 |
| 11 02 0 | 3240 | 477 | 352 | 3132 | 405 | 285 | 3053 | 431 | 220 | 2717 | 336 | 204 |
| 11 02 5 | 3796 | 544 | 378 | 3537 | 461 | 299 | 3358 | 407 | 256 | 3261 | 391 | 241 |
| 11 02 10 | 4175 | 576 | 481 | 4144 | 526 | 85 | 4137 | 479 | 353 | 3804 | 432 | 345 |
| 11 02 20 | 3060 | 442 | 239 | 2677 | 380 | 268 | 2748 | 311 | 185 | 2445 | 354 | 204 |
| 11 02 40 | 4531 | 762 | 374 | 4144 | 728 | 351 | 4826 | 646 | 143 | 4345 | 663 | 151 |
| 11 03 0 | 3841 | 441 | 375 | 2833 | 395 | 243 | 2613 | 369 | 258 | 2263 | 242 | 208 |
| 11 03 5 | 3203 | 410 | 361 | 369 | 361 | 405 | 3137 | 443 | 236 | 2521 | 257 | 173 |
| 11 03 10 | 3453 | 453 | 365 | 3506 | 395 | 233 | 2937 | 419 | 286 | 2624 | 305 | 208 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 11 03 20 | 2665 | 415 | 352 | 2676 | 344 | 295 | 2613 | 320 | 253 | 2212 | 266 | 211 |
| 11 03 40 | 2111 | 319 | 304 | 1850 | 294 | 247 | 1847 | 320 | 221 | 1363 | 195 | 170 |
| 11 03 60 | 1997 | 298 | 258 | 1800 | 243 | 225 | 1691 | 246 | 211 | 1492 | 172 | 151 |
| 11 04 0 | 2624 | 395 | 307 | 2471 | 329 | 285 | 2427 | 255 | 206 | 2263 | 270 | 177 |
| 11 04 5 | 2553 | 375 | 361 | 2420 | 321 | 294 | 2328 | 231 | 211 | 2109 | 230 | 191 |
| 11 04 10 | 2445 | 431 | 301 | 2313 | 354 | 258 | 2230 | 255 | 151 | 1948 | 305 | 180 |
| 11 04 20 | 1457 | 230 | 234 | 1293 | 190 | 192 | 1394 | 162 | 62 | 656 | 133 | 131 |
| 11 04 40 | 2056 | 345 | 305 | 2015 | 305 | 256 | 2034 | 231 | 177 | 1670 | 216 | 198 |
| 11 04 60 | 2653 | 380 | 321 | 2677 | 354 | 263 | 2460 | 278 | 205 | 2327 | 257 | 161 |
| 11 05 0 | 1304 | 220 | 241 | 1126 | 160 | 178 | 1133 | 131 | 123 | 363 | 107 | 91 |
| 11 05 5 | 1253 | 237 | 224 | 1126 | 187 | 172 | 1171 | 131 | 127 | 886 | 131 | 101 |
| 11 05 10 | 1814 | 260 | 260 | 1667 | 205 | 214 | 1617 | 158 | 161 | 1274 | 151 | 134 |
| 11 05 20 | 1403 | 215 | 276 | 1269 | 152 | 215 | 1301 | 158 | 140 | 1041 | 114 | 133 |
| 11 05 40 | 1403 | 215 | 237 | 1255 | 152 | 178 | 1245 | 105 | 124 | 990 | 120 | 106 |
| 11 05 60 | 1421 | 249 | 276 | 1291 | 196 | 226 | 1338 | 131 | 156 | 1026 | 123 | 134 |
| 11 06 0 | 607 | 154 | 201 | 515 | 143 | 172 | 483 | 227 | 201 | 430 | 75 | 102 |
| 11 06 5 | 1014 | 124 | 163 | 462 | 88 | 146 | 434 | 68 | 107 | 384 | 53 | 94 |
| 11 06 10 | 683 | 144 | 246 | 607 | 103 | 189 | 563 | 91 | 149 | 497 | 70 | 129 |
| 11 06 20 | 652 | 134 | 212 | 496 | 83 | 166 | 498 | 68 | 136 | 457 | 58 | 116 |
| 11 06 40 | 645 | 154 | 262 | 594 | 103 | 230 | 531 | 68 | 263 | 503 | 72 | 150 |
| 11 06 60 | 954 | 184 | 292 | 851 | 143 | 217 | 821 | 136 | 195 | 827 | 124 | 151 |
| 11 06 80 | 855 | 189 | 276 | 734 | 135 | 228 | 772 | 91 | 171 | 728 | 101 | 178 |
| 11 06 100 | 888 | 178 | 232 | 793 | 135 | 185 | 756 | 114 | 140 | 717 | 110 | 123 |
| 11 06 200 | 633 | 159 | 211 | 583 | 119 | 157 | 547 | 91 | 118 | 477 | 75 | 117 |
| 12 01 0 | 1702 | 269 | 306 | 1423 | 222 | 229 | 1409 | 207 | 194 | 1262 | 158 | 163 |
| 12 01 5 | 1736 | 250 | 337 | 1423 | 194 | 317 | 1457 | 166 | 279 | 1286 | 152 | 244 |
| 12 01 10 | 1563 | 236 | 320 | 1360 | 173 | 242 | 1355 | 145 | 146 | 1334 | 140 | 171 |
| 12 01 20 | 1602 | 245 | 249 | 1237 | 173 | 191 | 1232 | 145 | 159 | 1167 | 147 | 136 |
| 12 01 40 | 1075 | 198 | 222 | 837 | 146 | 174 | 925 | 104 | 115 | 869 | 112 | 102 |
| 12 01 60 | 1200 | 230 | 252 | 1046 | 173 | 189 | 1036 | 124 | 151 | 941 | 125 | 130 |
| 12 02 0 | 3754 | 538 | 357 | 3847 | 444 | 250 | 3836 | 443 | 254 | 3521 | 417 | 206 |
| 12 02 5 | 1903 | 306 | 290 | 1642 | 272 | 223 | 1792 | 211 | 194 | 1731 | 200 | 159 |
| 12 02 10 | 1974 | 302 | 253 | 1729 | 257 | 224 | 1703 | 232 | 198 | 1470 | 212 | 172 |
| 12 02 20 | 1749 | 265 | 278 | 1405 | 215 | 209 | 1523 | 190 | 163 | 1328 | 170 | 153 |
| 12 02 40 | 1813 | 283 | 268 | 1577 | 215 | 221 | 1762 | 190 | 240 | 1495 | 172 | 159 |
| 12 02 60 | 4027 | 577 | 349 | 3758 | 487 | 348 | 3643 | 443 | 295 | 3463 | 417 | 250 |
| 12 03 0 | 4892 | 623 | 524 | 4736 | 462 | 429 | 5131 | 589 | 394 | 4410 | 455 | 302 |
| 12 03 5 | 5983 | 812 | 616 | 5786 | 676 | 521 | 7215 | 835 | 536 | 4554 | 691 | 460 |
| 12 03 10 | 6513 | 924 | 658 | 6207 | 904 | 658 | 6428 | 1030 | 663 | 6072 | 663 | 516 |
| 12 03 20 | 2172 | 312 | 362 | 1939 | 289 | 292 | 2209 | 275 | 284 | 1762 | 229 | 206 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 12 03 40 | 2099 | 328 | 358 | 1939 | 289 | 289 | 1932 | 340 | 396 | 1513 | 191 | 229 |
| 12 03 60 | 1604 | 281 | 269 | 1641 | 223 | 204 | 1716 | 223 | 112 | 1355 | 172 | 137 |
| 12 04 0 | 7912 | 680 | 556 | 7538 | 711 | 490 | 7867 | 834 | 373 | 6466 | 733 | 390 |
| 12 04 5 | 6987 | 915 | 620 | 5782 | 687 | 566 | 5400 | 787 | 615 | 5129 | 754 | 495 |
| 12 04 10 | 8417 | 737 | 395 | 7021 | 679 | 432 | 5400 | 810 | 469 | 4514 | 759 | 475 |
| 12 04 20 | 3839 | 437 | 412 | 4345 | 461 | 270 | 4132 | 417 | 237 | 3129 | 354 | 225 |
| 12 04 40 | 4453 | 633 | 484 | 4447 | 607 | 443 | 4067 | 602 | 432 | 3539 | 459 | 323 |
| 12 05 0 | 5605 | 704 | 519 | 4750 | 558 | 439 | 4132 | 533 | 450 | 3755 | 529 | 438 |
| 12 05 5 | 5912 | 328 | 555 | 4337 | 647 | 460 | 5266 | 555 | 393 | 4821 | 503 | 273 |
| 12 05 10 | 10269 | 1037 | 652 | 6918 | 921 | 639 | 6133 | 810 | 645 | 6155 | 795 | 519 |
| 12 05 20 | 6756 | 836 | 648 | 5267 | 720 | 615 | 4667 | 717 | 603 | 4016 | 626 | 495 |
| 12 06 0 | 3030 | 459 | 380 | 2676 | 336 | 271 | 2550 | 349 | 233 | 2764 | 302 | 200 |
| 12 06 5 | 2775 | 365 | 387 | 2686 | 344 | 255 | 2473 | 324 | 247 | 2096 | 297 | 241 |
| 12 06 10 | 4314 | 653 | 442 | 3516 | 428 | 313 | 3150 | 424 | 390 | 3682 | 410 | 300 |
| 12 06 20 | 7326 | 971 | 841 | 6112 | 807 | 669 | 6176 | 748 | 610 | 6117 | 663 | 551 |
| 12 07 0 | 2872 | 452 | 327 | 2729 | 354 | 261 | 2476 | 401 | 244 | 1930 | 257 | 200 |
| 12 07 5 | 3144 | 421 | 390 | 3295 | 387 | 285 | 2924 | 331 | 272 | 2580 | 279 | 242 |
| 12 07 10 | 4272 | 634 | 500 | 3604 | 453 | 400 | 3671 | 496 | 365 | 3036 | 400 | 256 |
| 12 07 15 | 6291 | 951 | 632 | 5786 | 733 | 606 | 5032 | 756 | 585 | 4554 | 740 | 464 |
| 12 08 0 | 3143 | 508 | 441 | 2791 | 357 | 395 | 4235 | 202 | 340 | 3237 | 264 | 233 |
| 12 08 5 | 3980 | 464 | 399 | 3473 | 417 | 298 | 2615 | 404 | 339 | 2610 | 336 | 244 |
| 12 08 10 | 3373 | 439 | 458 | 3100 | 367 | 359 | 2779 | 317 | 393 | 2177 | 293 | 206 |
| 12 09 0 | 2734 | 420 | 0 | 2425 | 299 | 280 | 2776 | 283 | 246 | 2288 | 277 | 247 |
| 12 09 5 | 3771 | 478 | 367 | 3385 | 372 | 284 | 3263 | 354 | 272 | 2548 | 318 | 234 |
| 12 09 10 | 5892 | 821 | 427 | 4599 | 1440 | 399 | 4692 | 709 | 451 | 3587 | 573 | 442 |
| 12 10 0 | 2635 | 367 | 292 | 2430 | 301 | 243 | 2584 | 314 | 214 | 2404 | 295 | 153 |
| 12 10 5 | 2515 | 385 | 347 | 2849 | 291 | 277 | 2342 | 285 | 367 | 2178 | 228 | 233 |
| 12 10 10 | 3630 | 499 | 333 | 4728 | 495 | 231 | 4514 | 456 | 218 | 4106 | 407 | 212 |
| 12 11 0 | 3138 | 433 | 303 | 3151 | 330 | 235 | 3311 | 371 | 238 | 3173 | 309 | 138 |
| 12 11 5 | 3138 | 397 | 285 | 2372 | 340 | 295 | 2705 | 342 | 269 | 2489 | 300 | 240 |
| 12 11 10 | 2600 | 325 | 236 | 2518 | 271 | 225 | 2705 | 256 | 208 | 2469 | 241 | 160 |
| 12 11 14 | 3734 | 529 | 455 | 3333 | 485 | 370 | 3339 | 456 | 348 | 3422 | 426 | 322 |
| 13 01 0 | 6655 | 729 | 449 | 5283 | 673 | 399 | 6140 | 762 | 448 | 4968 | 578 | 442 |
| 13 01 5 | 6049 | 583 | 456 | 3927 | 503 | 401 | 3508 | 533 | 445 | 3664 | 578 | 434 |
| 13 01 10 | 3991 | 647 | 526 | 3534 | 553 | 393 | 4047 | 533 | 391 | 3226 | 473 | 456 |
| 13 01 20 | 3442 | 453 | 347 | 2997 | 332 | 278 | 2968 | 381 | 283 | 2749 | 353 | 255 |
| 13 01 25 | 2983 | 470 | 393 | 2617 | 415 | 333 | 2829 | 381 | 289 | 2661 | 353 | 251 |
| 13 02 0 | 6014 | 685 | 540 | 5924 | 586 | 376 | 5725 | 563 | 447 | 4721 | 630 | 418 |
| 13 02 5 | 6398 | 737 | 648 | 7406 | 655 | 431 | 4813 | 580 | 552 | 4554 | 507 | 430 |
| 13 02 10 | 7673 | 931 | 457 | 6883 | 698 | 368 | 6034 | 583 | 458 | 5268 | 691 | 445 |

CRUISE NASA1 MAY 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 345 | 390 | B135 | 345 | 390 | B135 | 345 | 390 | B135 | 345 | 390 | B135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 13 02 20 | 3034 | 428 | 343 | 2693 | 419 | 360 | 3052 | 530 | 289 | 2501 | 330 | 283 |
| 13 03 0 | 1607 | 203 | 211 | 1367 | 168 | 179 | 1229 | 369 | 147 | 1127 | 128 | 120 |
| 13 03 5 | 1473 | 227 | 240 | 1235 | 161 | 195 | 1202 | 147 | 175 | 986 | 132 | 140 |
| 13 03 10 | 1527 | 218 | 215 | 1196 | 181 | 178 | 1202 | 147 | 149 | 1067 | 132 | 129 |
| 13 03 20 | 1875 | 243 | 237 | 1874 | 194 | 181 | 1649 | 185 | 177 | 1485 | 156 | 134 |
| 13 03 40 | 1420 | 251 | 289 | 1311 | 207 | 228 | 1229 | 185 | 200 | 1217 | 156 | 163 |
| 13 03 60 | 2035 | 373 | 321 | 1912 | 310 | 262 | 1829 | 256 | 222 | 1782 | 245 | 203 |
| 13 04 0 | 1589 | 236 | 271 | 1392 | 195 | 207 | 1555 | 199 | 177 | 1493 | 159 | 159 |
| 13 04 5 | 1444 | 227 | 230 | 1351 | 181 | 170 | 1357 | 159 | 130 | 1332 | 152 | 115 |
| 13 04 10 | 1675 | 253 | 224 | 1475 | 209 | 203 | 1526 | 199 | 178 | 1447 | 171 | 146 |
| 13 04 20 | 1387 | 253 | 250 | 1289 | 195 | 203 | 1300 | 159 | 161 | 1309 | 156 | 141 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 06 05 0 | 2039 | 247 | 299 | 1696 | 187 | 259 | 1740 | 158 | 0 | 1337 | 87 | 0 |
| 07 01 0 | 2491 | 321 | 333 | 2150 | 314 | 275 | 1976 | 242 | 224 | 2215 | 236 | 198 |
| 07 01 3 | 2419 | 290 | 271 | 2072 | 284 | 224 | 1749 | 188 | 198 | 1929 | 215 | 199 |
| 07 01 8 | 1862 | 254 | 295 | 1717 | 236 | 206 | 1623 | 188 | 185 | 1858 | 197 | 173 |
| 07 02 0 | 1950 | 282 | 297 | 1889 | 174 | 233 | 1658 | 202 | 243 | 1415 | 177 | 184 |
| 07 02 3 | 2976 | 351 | 343 | 2307 | 297 | 307 | 2326 | 259 | 230 | 2154 | 196 | 174 |
| 07 02 8 | 2057 | 289 | 264 | 1708 | 236 | 227 | 1815 | 172 | 174 | 1739 | 172 | 140 |
| 07 02 13 | 3107 | 426 | 412 | 2846 | 420 | 340 | 2692 | 374 | 315 | 2530 | 300 | 240 |
| 07 03 0 | 1862 | 266 | 303 | 1599 | 216 | 240 | 1559 | 188 | 188 | 1526 | 203 | 146 |
| 07 03 5 | 2114 | 315 | 300 | 1875 | 255 | 240 | 3323 | 215 | 119 | 463 | 205 | 256 |
| 07 03 10 | 3789 | 383 | 380 | 3085 | 314 | 321 | 2965 | 295 | 251 | 3251 | 381 | 155 |
| 07 03 15 | 1621 | 321 | 154 | 1409 | 236 | 243 | 1102 | 430 | 230 | 2465 | 424 | 177 |
| 07 04 0 | 1623 | 279 | 350 | 1482 | 235 | 321 | 1427 | 228 | 297 | 1344 | 224 | 214 |
| 07 04 8 | 1931 | 299 | 375 | 1535 | 245 | 367 | 1359 | 260 | 277 | 1854 | 205 | 221 |
| 07 04 18 | 2403 | 346 | 236 | 1344 | 245 | 265 | 1359 | 195 | 231 | 2010 | 153 | 154 |
| 07 04 23 | 2544 | 379 | 374 | 1953 | 357 | 338 | 2302 | 325 | 299 | 2081 | 295 | 250 |
| 08 01 0 | 2184 | 260 | 272 | 1640 | 199 | 224 | 1544 | 152 | 180 | 1707 | 157 | 151 |
| 08 01 8 | 2532 | 418 | 399 | 2331 | 304 | 390 | 2749 | 302 | 313 | 3029 | 282 | 329 |
| 08 01 13 | 2039 | 432 | 425 | 1679 | 283 | 311 | 2359 | 212 | 354 | 1930 | 263 | 313 |
| 08 01 18 | 1632 | 288 | 315 | 1553 | 242 | 272 | 1415 | 182 | 144 | 1350 | 223 | 209 |
| 08 01 23 | 1269 | 233 | 328 | 1299 | 179 | 240 | 1115 | 152 | 202 | 1051 | 188 | 211 |
| 08 02 0 | 2103 | 308 | 344 | 1659 | 249 | 285 | 1798 | 177 | 224 | 1471 | 163 | 209 |
| 08 02 8 | 2294 | 342 | 102 | 2113 | 321 | 260 | 1840 | 354 | 368 | 1801 | 294 | 208 |
| 08 02 13 | 2486 | 418 | 393 | 2067 | 384 | 279 | 2091 | 354 | 272 | 2256 | 238 | 229 |
| 08 02 18 | 1950 | 254 | 313 | 1378 | 125 | 263 | 1548 | 206 | 257 | 1319 | 276 | 217 |
| 08 02 23 | 975 | 191 | 361 | 930 | 146 | 256 | 753 | 118 | 213 | 769 | 100 | 189 |
| 08 03 0 | 1441 | 260 | 376 | 1248 | 194 | 313 | 1000 | 128 | 245 | 910 | 106 | 194 |
| 08 03 15 | 897 | 176 | 291 | 911 | 142 | 220 | 682 | 96 | 853 | 496 | 75 | 154 |
| 08 03 40 | 834 | 176 | 289 | 669 | 129 | 214 | 591 | 64 | 834 | 455 | 66 | 115 |
| 08 03 55 | 1524 | 327 | 319 | 1270 | 194 | 266 | 1000 | 128 | 200 | 796 | 106 | 155 |
| 08 03 60 | 2610 | 385 | 383 | 2223 | 323 | 320 | 2046 | 256 | 216 | 1726 | 198 | 166 |
| 08 03 65 | 2577 | 393 | 391 | 2223 | 336 | 338 | 1848 | 256 | 249 | 1658 | 192 | 198 |
| 08 04 0 | 1405 | 223 | 376 | 1364 | 316 | 292 | 1211 | 186 | 292 | 1107 | 140 | 249 |
| 08 04 25 | 1105 | 174 | 263 | 920 | 147 | 211 | 815 | 94 | 158 | 634 | 100 | 148 |
| 08 04 50 | 599 | 140 | 211 | 497 | 90 | 175 | 462 | 31 | 131 | 386 | 57 | 114 |
| 08 04 65 | 672 | 160 | 320 | 747 | 124 | 259 | 616 | 94 | 211 | 523 | 97 | 169 |
| 08 04 70 | 850 | 167 | 227 | 780 | 135 | 201 | 726 | 94 | 140 | 617 | 67 | 121 |
| 08 04 75 | 1105 | 257 | 255 | 1061 | 159 | 211 | 925 | 124 | 174 | 840 | 97 | 138 |
| 08 05 0 | 1496 | 243 | 313 | 1347 | 234 | 226 | 1322 | 164 | 236 | 1177 | 140 | 196 |
| 08 05 75 | 745 | 140 | 208 | 577 | 107 | 190 | 581 | 66 | 133 | 518 | 46 | 136 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 345 | 390 | 3135 | 345 | 390 | 3135 | 845 | 890 | 8135 |
| | | | | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | |
| 08 05 90 | 523 | 195 | 229 | 608 | 95 | 173 | 419 | 66 | 142 | 194 | 94 | 146 |
| 08 05 95 | 593 | 133 | 225 | 499 | 85 | 171 | 511 | 66 | 137 | 412 | 62 | 127 |
| 08 05 100 | 652 | 146 | 227 | 577 | 107 | 212 | 651 | 33 | 130 | 490 | 72 | 117 |
| 08 06 0 | 1220 | 243 | 312 | 1051 | 174 | 194 | 1275 | 147 | 224 | 422 | 101 | 182 |
| 08 06 50 | 1313 | 216 | 273 | 1117 | 174 | 168 | 894 | 147 | 243 | 931 | 114 | 140 |
| 08 06 75 | 693 | 146 | 240 | 639 | 109 | 185 | 784 | 74 | 170 | 536 | 66 | 120 |
| 08 06 90 | 852 | 188 | 354 | 815 | 141 | 268 | 810 | 111 | 273 | 626 | 97 | 81 |
| 08 06 95 | 714 | 160 | 249 | 672 | 120 | 191 | 679 | 111 | 175 | 512 | 81 | 151 |
| 08 06 100 | 777 | 153 | 230 | 575 | 109 | 187 | 679 | 74 | 175 | 682 | 66 | 112 |
| 09 01 0 | 983 | 168 | 242 | 953 | 142 | 197 | 857 | 87 | 161 | 706 | 97 | 172 |
| 09 01 50 | 876 | 168 | 252 | 775 | 132 | 213 | 652 | 87 | 172 | 722 | 88 | 134 |
| 09 01 75 | 886 | 168 | 261 | 834 | 142 | 217 | 734 | 172 | 229 | 675 | 100 | 151 |
| 09 01 90 | 769 | 168 | 276 | 700 | 112 | 231 | 612 | 87 | 194 | 565 | 108 | 172 |
| 09 01 95 | 769 | 142 | 221 | 640 | 101 | 184 | 1020 | 57 | 112 | 478 | 67 | 120 |
| 09 01 100 | 574 | 129 | 176 | 551 | 91 | 181 | 530 | 57 | 137 | 471 | 67 | 121 |
| 09 02 0 | 1340 | 223 | 232 | 1083 | 144 | 186 | 1087 | 118 | 155 | 1022 | 110 | 137 |
| 09 02 50 | 692 | 148 | 256 | 1446 | 102 | 160 | 586 | 88 | 159 | 511 | 76 | 144 |
| 09 02 75 | 713 | 155 | 230 | 678 | 123 | 177 | 711 | 88 | 132 | 495 | 76 | 117 |
| 09 02 90 | 917 | 182 | 244 | 843 | 133 | 184 | 795 | 88 | 148 | 735 | 101 | 123 |
| 09 02 95 | 1161 | 237 | 332 | 1022 | 195 | 276 | 851 | 147 | 230 | 1098 | 135 | 185 |
| 09 02 100 | 1607 | 256 | 358 | 1455 | 205 | 274 | 1359 | 177 | 224 | 1118 | 146 | 196 |
| 09 03 0 | 1046 | 179 | 297 | 853 | 137 | 233 | 755 | 87 | 186 | 686 | 86 | 178 |
| 09 03 5 | 1283 | 258 | 412 | 1140 | 220 | 322 | 996 | 288 | 276 | 973 | 122 | 79 |
| 09 03 10 | 1354 | 230 | 322 | 1077 | 189 | 239 | 912 | 144 | 159 | 942 | 122 | 161 |
| 09 03 25 | 943 | 158 | 256 | 833 | 126 | 189 | 652 | 87 | 151 | 542 | 75 | 130 |
| 09 03 50 | 289 | 144 | 274 | 253 | 94 | 211 | 204 | 57 | 173 | 178 | 30 | 164 |
| 09 03 85 | 943 | 194 | 272 | 833 | 137 | 197 | 776 | 87 | 166 | 636 | 88 | 129 |
| 09 04 0 | 1411 | 269 | 269 | 1243 | 196 | 223 | 1215 | 140 | 178 | 1117 | 156 | 139 |
| 09 04 5 | 768 | 282 | 368 | 1568 | 265 | 290 | 1414 | 197 | 228 | 888 | 186 | 194 |
| 09 04 10 | 561 | 194 | 268 | 503 | 157 | 232 | 856 | 84 | 176 | 750 | 96 | 158 |
| 09 04 15 | 653 | 138 | 219 | 576 | 98 | 173 | 478 | 56 | 135 | 125 | 57 | 124 |
| 09 04 25 | 288 | 157 | 260 | 257 | 108 | 203 | 557 | 56 | 152 | 456 | 62 | 119 |
| 09 04 55 | 1723 | 289 | 276 | 1598 | 265 | 247 | 1457 | 169 | 226 | 1338 | 168 | 168 |
| 09 05 0 | 936 | 192 | 233 | 806 | 120 | 178 | 758 | 82 | 137 | 646 | 91 | 119 |
| 09 05 5 | 1075 | 198 | 298 | 925 | 158 | 250 | 792 | 110 | 233 | 764 | 112 | 74 |
| 09 05 10 | 1632 | 343 | 262 | 1151 | 204 | 206 | 1264 | 165 | 190 | 1132 | 151 | 157 |
| 09 05 15 | 1155 | 180 | 248 | 1262 | 158 | 220 | 792 | 110 | 194 | 853 | 96 | 156 |
| 09 05 25 | 2515 | 373 | 347 | 2381 | 362 | 318 | 2213 | 302 | 298 | 1990 | 243 | 290 |
| 09 06 0 | 765 | 173 | 215 | 690 | 134 | 170 | 617 | 84 | 108 | 539 | 81 | 112 |
| 09 06 5 | 1023 | 204 | 250 | 927 | 192 | 198 | 717 | 84 | 163 | 638 | 88 | 173 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B45 | B90 | B135 | B45 | B90 | B135 | B45 | B90 | B135 | B45 | B90 | B135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 09 06 10 | 2147 | 241 | 303 | 1319 | 192 | 287 | 1781 | 140 | 190 | 1486 | 142 | 176 |
| 09 06 25 | 4251 | 550 | 478 | 3308 | 461 | 440 | 4371 | 450 | 140 | 5440 | 396 | 237 |
| 09 07 0 | 1061 | 190 | 601 | 1000 | 138 | 450 | 856 | 110 | 385 | 607 | 94 | 143 |
| 09 07 5 | 1061 | 184 | 181 | 834 | 129 | 186 | 758 | 55 | 157 | 594 | 69 | 132 |
| 09 07 10 | 1198 | 297 | 254 | 1333 | 203 | 194 | 1027 | 110 | 182 | 940 | 113 | 141 |
| 09 07 16 | 2398 | 362 | 346 | 2069 | 414 | 315 | 2056 | 275 | 286 | 1989 | 219 | 233 |
| 0R 08 0 | 1269 | 235 | 276 | 1083 | 175 | 29 | 979 | 144 | 788 | 957 | 114 | 145 |
| 09 08 5 | 1453 | 247 | 394 | 1317 | 194 | 216 | 1161 | 144 | 166 | 996 | 139 | 141 |
| 09 08 10 | 1534 | 272 | 94 | 1516 | 213 | 75 | 1265 | 172 | 202 | 1415 | 150 | 153 |
| 09 09 0 | 1411 | 282 | 296 | 1115 | 198 | 219 | 680 | 158 | 203 | 912 | 142 | 155 |
| 09 09 5 | 1600 | 276 | 300 | 1239 | 180 | 219 | 1375 | 131 | 172 | 1022 | 122 | 170 |
| 09 09 8 | 2267 | 382 | 360 | 1690 | 252 | 259 | 1524 | 237 | 240 | 1447 | 190 | 186 |
| 11 01 0 | 831 | 148 | 216 | 682 | 109 | 179 | 608 | 81 | 159 | 550 | 74 | 123 |
| 11 01 5 | 1001 | 166 | 224 | 852 | 137 | 177 | 893 | 107 | 146 | 594 | 87 | 122 |
| 11 01 8 | 850 | 166 | 328 | 742 | 137 | 195 | 696 | 81 | 174 | 665 | 107 | 137 |
| 11 02 0 | 827 | 180 | 226 | 697 | 133 | 187 | 661 | 82 | 142 | 638 | 83 | 127 |
| 11 02 5 | 782 | 168 | 241 | 767 | 123 | 184 | 428 | 82 | 173 | 683 | 81 | 120 |
| 11 02 10 | 876 | 192 | 275 | 767 | 123 | 224 | 778 | 82 | 408 | 957 | 86 | 153 |
| 11 02 15 | 745 | 192 | 272 | 781 | 114 | 197 | 817 | 110 | 173 | 607 | 83 | 146 |
| 11 03 0 | 830 | 177 | 282 | 762 | 457 | 204 | 734 | 115 | 146 | 638 | 91 | 120 |
| 11 03 50 | 691 | 144 | 237 | 625 | 114 | 197 | 571 | 87 | 155 | 501 | 64 | 128 |
| 11 03 100 | 603 | 144 | 229 | 564 | 114 | 192 | 490 | 57 | 159 | 440 | 56 | 119 |
| 11 03 250 | 543 | 125 | 263 | 488 | 94 | 218 | 408 | 57 | 163 | 346 | 49 | 146 |
| 11 03 500 | 583 | 144 | 220 | 594 | 83 | 177 | 408 | 29 | 143 | 330 | 49 | 114 |
| 11 04 0 | 863 | 157 | 211 | 783 | 116 | 174 | 700 | 82 | 140 | 664 | 88 | 115 |
| 11 04 50 | 563 | 120 | 210 | 484 | 97 | 175 | 467 | 55 | 133 | 425 | 60 | 116 |
| 11 04 100 | 482 | 102 | 188 | 412 | 68 | 152 | 350 | 28 | 119 | 301 | 41 | 110 |
| 11 04 250 | 645 | 114 | 205 | 599 | 88 | 163 | 583 | 28 | 107 | 494 | 52 | 105 |
| 11 04 500 | 726 | 127 | 243 | 698 | 88 | 178 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 05 0 | 726 | 157 | 235 | 755 | 127 | 183 | 700 | 82 | 159 | 587 | 88 | 127 |
| 11 05 50 | 672 | 157 | 230 | 655 | 127 | 194 | 622 | 82 | 144 | 533 | 95 | 138 |
| 11 05 100 | 817 | 133 | 222 | 826 | 107 | 166 | 700 | 55 | 140 | 567 | 57 | 117 |
| 11 05 250 | 690 | 127 | 229 | 684 | 107 | 186 | 622 | 55 | 144 | 463 | 57 | 126 |
| 11 05 500 | 482 | 108 | 184 | 385 | 69 | 146 | 350 | 28 | 99 | 286 | 41 | 100 |
| 12 01 0 | 1127 | 192 | 227 | 1045 | 154 | 193 | 990 | 109 | 145 | 941 | 99 | 113 |
| 12 01 5 | 1250 | 217 | 230 | 1074 | 173 | 198 | 1024 | 137 | 143 | 926 | 118 | 109 |
| 12 01 10 | 757 | 217 | 250 | 720 | 154 | 210 | 621 | 82 | 183 | 911 | 96 | 148 |
| 12 01 25 | 943 | 161 | 215 | 861 | 125 | 182 | 795 | 82 | 154 | 713 | 91 | 126 |
| 12 01 50 | 523 | 112 | 210 | 416 | 77 | 157 | 369 | 55 | 117 | 341 | 56 | 110 |
| 12 01 100 | 607 | 142 | 197 | 560 | 106 | 156 | 524 | 55 | 110 | 448 | 67 | 110 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 345 | 390 | 3135 | 845 | 890 | 3135 | 345 | 890 | 3135 | 845 | 890 | 3135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 12 02 0 | 1074 | 172 | 211 | 890 | 129 | 174 | 815 | 107 | 130 | 776 | 87 | 118 |
| 12 02 5 | 1285 | 178 | 214 | 1170 | 140 | 167 | 947 | 107 | 123 | 1016 | 92 | 110 |
| 12 02 10 | 1095 | 159 | 215 | 1021 | 120 | 174 | 909 | 81 | 125 | 896 | 101 | 121 |
| 12 02 25 | 864 | 159 | 212 | 452 | 120 | 203 | 701 | 81 | 116 | 717 | 89 | 119 |
| 12 02 50 | 510 | 121 | 194 | 416 | 80 | 155 | 379 | 54 | 94 | 351 | 48 | 96 |
| 12 02 100 | 1791 | 287 | 269 | 1560 | 229 | 7 | 925 | 321 | 750 | 1255 | 153 | 143 |
| 12 03 5 | 1279 | 197 | 270 | 1381 | 160 | 215 | 1437 | 94 | 127 | 1184 | 91 | 258 |
| 12 03 10 | 1399 | 211 | 289 | 1174 | 160 | 242 | 1172 | 125 | 206 | 1046 | 118 | 153 |
| 12 03 25 | 1002 | 182 | 253 | 925 | 138 | 222 | 795 | 94 | 159 | 583 | 94 | 140 |
| 12 03 50 | 639 | 139 | 225 | 672 | 92 | 178 | 442 | 62 | 133 | 390 | 63 | 124 |
| 12 03 75 | 925 | 190 | 231 | 706 | 138 | 159 | 751 | 94 | 117 | 678 | 103 | 112 |
| 12 04 0 | 845 | 155 | 219 | 863 | 115 | 166 | 795 | 88 | 127 | 565 | 72 | 113 |
| 12 04 5 | 938 | 175 | 229 | 817 | 137 | 183 | 711 | 88 | 153 | 565 | 75 | 125 |
| 12 04 10 | 1474 | 230 | 255 | 1553 | 189 | 213 | 1021 | 147 | 179 | 894 | 141 | 132 |
| 12 04 25 | 692 | 162 | 198 | 724 | 115 | 150 | 565 | 88 | 118 | 573 | 97 | 95 |
| 12 04 50 | 1429 | 230 | 243 | 1394 | 304 | 191 | 1285 | 177 | 167 | 1079 | 141 | 131 |
| 12 05 0 | 789 | 155 | 206 | 828 | 123 | 147 | 668 | 118 | 113 | 625 | 81 | 100 |
| 12 05 5 | 818 | 161 | 200 | 692 | 123 | 154 | 627 | 88 | 115 | 594 | 79 | 98 |
| 12 05 10 | 1324 | 193 | 230 | 959 | 185 | 214 | 1190 | 147 | 129 | 772 | 90 | 121 |
| 12 05 15 | 1110 | 181 | 226 | 990 | 144 | 183 | 936 | 118 | 141 | 710 | 93 | 120 |
| 12 05 20 | 1153 | 219 | 247 | 1145 | 205 | 176 | 1422 | 118 | 138 | 788 | 107 | 123 |
| 12 06 0 | 819 | 174 | 218 | 819 | 132 | 160 | 796 | 88 | 148 | 648 | 76 | 141 |
| 12 06 5 | 854 | 168 | 239 | 789 | 121 | 248 | 711 | 118 | 153 | 563 | 88 | 116 |
| 12 06 10 | 940 | 168 | 221 | 893 | 132 | 171 | 816 | 88 | 147 | 687 | 84 | 130 |
| 12 06 15 | 1829 | 239 | 250 | 1438 | 294 | 216 | 1317 | 147 | 185 | 1045 | 131 | 164 |
| 12 06 20 | 1464 | 226 | 245 | 1340 | 172 | 191 | 1296 | 147 | 144 | 1065 | 128 | 128 |
| 12 07 0 | 850 | 188 | 242 | 955 | 143 | 178 | 950 | 127 | 156 | 761 | 94 | 119 |
| 12 07 5 | 828 | 167 | 228 | 765 | 133 | 188 | 644 | 95 | 149 | 529 | 90 | 108 |
| 12 07 10 | 724 | 167 | 238 | 647 | 121 | 178 | 633 | 95 | 149 | 529 | 73 | 116 |
| 12 08 0 | 693 | 172 | 221 | 568 | 119 | 170 | 557 | 61 | 101 | 471 | 58 | 98 |
| 12 08 10 | 817 | 158 | 211 | 711 | 129 | 155 | 557 | 91 | 122 | 495 | 88 | 95 |
| 12 08 15 | 1156 | 198 | 266 | 1071 | 161 | 213 | 958 | 121 | 166 | 785 | 119 | 135 |
| 12 09 0 | 792 | 166 | 232 | 777 | 135 | 174 | 659 | 118 | 113 | 478 | 81 | 113 |
| 12 09 5 | 1430 | 232 | 243 | 1159 | 187 | 199 | 1129 | 147 | 153 | 1045 | 120 | 77 |
| 12 09 8 | 2826 | 425 | 370 | 2723 | 353 | 313 | 2342 | 295 | 259 | 4052 | 253 | 94 |
| 13 01 0 | 1324 | 191 | 224 | 1163 | 154 | 172 | 1266 | 127 | 118 | 1180 | 107 | 98 |
| 13 01 5 | 840 | 158 | 208 | 750 | 111 | 0 | 651 | 76 | 0 | 141 | 73 | 0 |
| 13 01 10 | 970 | 180 | 234 | 842 | 86 | 189 | 795 | 102 | 159 | 718 | 90 | 123 |
| 13 02 0 | 905 | 204 | 246 | 828 | 147 | 264 | 830 | 115 | 163 | 664 | 88 | 125 |
| 13 02 5 | 1242 | 198 | 234 | 977 | 186 | 188 | 918 | 202 | 158 | 911 | 117 | 120 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 13 02 10 | 759 | 178 | 227 | 662 | 127 | 217 | 652 | 87 | 191 | 555 | 71 | 107 |
| 13 02 15 | 1179 | 204 | 237 | 1008 | 166 | 179 | 1061 | 115 | 131 | 1003 | 109 | 114 |
| 13 03 0 | 1037 | 219 | 276 | 1089 | 180 | 223 | 958 | 115 | 197 | 836 | 107 | 140 |
| 13 03 5 | 975 | 182 | 261 | 908 | 140 | 204 | 1041 | 115 | 132 | 772 | 93 | 118 |
| 13 03 10 | 1370 | 301 | 250 | 1150 | 281 | 220 | 1161 | 87 | 187 | 957 | 114 | 180 |
| 13 03 15 | 1452 | 257 | 241 | 1029 | 211 | 233 | 1161 | 144 | 207 | 1219 | 267 | 37 |
| 13 03 20 | 2133 | 309 | 291 | 2130 | 249 | 235 | 1658 | 202 | 243 | 1640 | 196 | 48 |
| 13 04 0 | 923 | 186 | 244 | 784 | 136 | 174 | 836 | 118 | 146 | 782 | 104 | 117 |
| 13 04 7 | 902 | 179 | 264 | 727 | 127 | 198 | 920 | 88 | 163 | 686 | 88 | 152 |
| 13 04 10 | 1601 | 199 | 215 | 1040 | 136 | 175 | 1046 | 118 | 136 | 848 | 110 | 121 |
| 13 04 15 | 1931 | 259 | 292 | 1638 | 194 | 289 | 795 | 177 | 336 | 1663 | 178 | 200 |
| 13 04 20 | 1430 | 206 | 243 | 996 | 136 | 178 | 1003 | 118 | 138 | 1022 | 118 | 122 |
| 13 05 0 | 2379 | 322 | 330 | 2262 | 287 | 285 | 2215 | 256 | 138 | 1929 | 201 | 193 |
| 13 05 10 | 2815 | 349 | 313 | 2693 | 297 | 288 | 2351 | 256 | 516 | 2101 | 228 | 209 |
| 13 05 55 | 1338 | 240 | 93 | 1197 | 198 | 65 | 1085 | 127 | 36 | 1108 | 158 | 36 |
| 13 05 0 | 1681 | 257 | 255 | 1470 | 217 | 204 | 1537 | 159 | 172 | 1235 | 152 | 131 |
| 13 05 10 | 1220 | 257 | 292 | 1295 | 185 | 221 | 1176 | 159 | 190 | 975 | 112 | 150 |
| 13 05 55 | 788 | 167 | 230 | 623 | 131 | 185 | 587 | 95 | 152 | 503 | 77 | 123 |
| 13 06 0 | 3012 | 452 | 368 | 2722 | 361 | 294 | 2616 | 333 | 256 | 2682 | 276 | 29 |
| 13 06 10 | 2820 | 310 | 273 | 2058 | 244 | 243 | 1930 | 212 | 204 | 1766 | 183 | 178 |
| 13 06 55 | 1072 | 175 | 237 | 827 | 149 | 192 | 815 | 121 | 153 | 801 | 100 | 117 |
| 13 06 0 | 1250 | 263 | 280 | 1282 | 234 | 237 | 1220 | 212 | 217 | 1193 | 146 | 156 |
| 13 06 10 | 906 | 169 | 240 | 827 | 149 | 200 | 772 | 121 | 154 | 659 | 102 | 122 |
| 13 06 55 | 672 | 128 | 147 | 468 | 95 | 158 | 451 | 121 | 127 | 403 | 58 | 94 |
| 14 02 0 | 2578 | 282 | 300 | 2254 | 285 | 257 | 2007 | 206 | 255 | 1496 | 200 | 209 |
| 14 02 3 | 1822 | 257 | 280 | 1719 | 199 | 304 | 1700 | 177 | 208 | 1245 | 158 | 181 |
| 14 02 7 | 1556 | 420 | 307 | 1289 | 228 | 238 | 1317 | 177 | 206 | 1133 | 155 | 187 |
| 14 02 10 | 1645 | 269 | 307 | 1318 | 199 | 250 | 1359 | 177 | 204 | 1264 | 166 | 140 |
| 14 03 0 | 1410 | 251 | 257 | 1393 | 205 | 221 | 1287 | 182 | 193 | 1700 | 133 | 115 |
| 14 03 5 | 1473 | 206 | 250 | 1269 | 174 | 205 | 1394 | 121 | 145 | 1020 | 108 | 127 |
| 14 03 10 | 146 | 226 | 352 | 1362 | 185 | 237 | 1373 | 152 | 211 | 1145 | 136 | 163 |
| 14 03 25 | 961 | 161 | 216 | 836 | 123 | 154 | 794 | 91 | 132 | 675 | 86 | 120 |
| 14 03 50 | 711 | 135 | 205 | 705 | 93 | 161 | 579 | 61 | 121 | 526 | 63 | 107 |
| 14 03 100 | 146 | 148 | 243 | 684 | 123 | 177 | 643 | 61 | 140 | 565 | 83 | 111 |
| 14 04 0 | 1151 | 0 | 0 | 1098 | 0 | 0 | 946 | 0 | 0 | 860 | 0 | 0 |
| 14 04 5 | 1127 | 188 | 248 | 1031 | 166 | 191 | 925 | 121 | 147 | 977 | 110 | 105 |
| 14 04 10 | 299 | 140 | 279 | 1068 | 143 | 189 | 903 | 91 | 148 | 842 | 98 | 120 |
| 14 04 25 | 871 | 160 | 226 | 809 | 133 | 186 | 731 | 91 | 135 | 682 | 83 | 107 |
| 14 04 50 | 683 | 140 | 201 | 793 | 100 | 156 | 559 | 61 | 122 | 438 | 77 | 96 |
| 14 04 100 | 799 | 160 | 220 | 761 | 143 | 166 | 710 | 61 | 115 | 598 | 77 | 94 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 345 | 390 | 8135 | 345 | 390 | 8135 | 345 | 390 | 8135 | 345 | 390 | 8135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 14 05 0 | 2120 | 376 | 471 | 2028 | 276 | 335 | 2012 | 256 | 216 | 1929 | 222 | 152 |
| 14 05 5 | 2663 | 341 | 308 | 2134 | 276 | 261 | 2351 | 256 | 199 | 2343 | 237 | 164 |
| 14 05 10 | 2761 | 362 | 279 | 3511 | 331 | 168 | 3124 | 351 | 115 | 2171 | 196 | 205 |
| 14 05 25 | 944 | 223 | 217 | 841 | 231 | 177 | 814 | 191 | 118 | 695 | 85 | 108 |
| 14 05 50 | 944 | 174 | 232 | 931 | 133 | 180 | 735 | 95 | 144 | 670 | 90 | 107 |
| 14 05 75 | 2465 | 369 | 318 | 2340 | 331 | 266 | 1944 | 287 | 242 | 236 | 222 | 122 |
| 14 06 0 | 1652 | 253 | 269 | 1212 | 201 | 217 | 1047 | 152 | 162 | 879 | 122 | 117 |
| 14 06 5 | 1163 | 215 | 256 | 508 | 134 | 212 | 815 | 91 | 131 | 863 | 88 | 104 |
| 14 06 10 | 1423 | 354 | 311 | 1245 | 212 | 233 | 1072 | 152 | 140 | 1128 | 139 | 120 |
| 14 06 25 | 1093 | 223 | 276 | 909 | 134 | 208 | 836 | 91 | 151 | 604 | 86 | 120 |
| 14 06 50 | 1575 | 276 | 239 | 1380 | 212 | 200 | 1133 | 182 | 158 | 1052 | 136 | 120 |
| 15 01 0 | 2694 | 341 | 311 | 2582 | 296 | 203 | 2290 | 328 | 250 | 1983 | 322 | 240 |
| 15 01 5 | 1915 | 310 | 296 | 1803 | 289 | 214 | 1723 | 281 | 212 | 2065 | 211 | 154 |
| 15 01 10 | 2092 | 276 | 68 | 2047 | 226 | 218 | 1790 | 211 | 541 | 1739 | 184 | 148 |
| 15 01 25 | 828 | 145 | 173 | 753 | 101 | 145 | 730 | 70 | 113 | 665 | 90 | 104 |
| 15 01 50 | 729 | 115 | 182 | 676 | 94 | 143 | 481 | 70 | 108 | 418 | 60 | 98 |
| 15 01 100 | 650 | 120 | 186 | 561 | 101 | 154 | 563 | 47 | 121 | 450 | 60 | 103 |
| 15 02 0 | 2049 | 295 | 285 | 1893 | 258 | 234 | 2007 | 222 | 412 | 2052 | 199 | 136 |
| 15 02 5 | 2059 | 295 | 231 | 2071 | 231 | 187 | 1929 | 166 | 179 | 1561 | 171 | 165 |
| 15 02 10 | 1684 | 237 | 242 | 1318 | 187 | 206 | 1397 | 166 | 186 | 1286 | 146 | 141 |
| 15 02 25 | 1435 | 243 | 267 | 1291 | 178 | 207 | 1440 | 139 | 164 | 1294 | 138 | 145 |
| 15 02 50 | 690 | 139 | 194 | 576 | 98 | 148 | 551 | 83 | 110 | 471 | 75 | 100 |
| 15 02 100 | 2254 | 353 | 291 | 2283 | 294 | 221 | 2243 | 278 | 242 | 1960 | 236 | 32 |
| 15 03 0 | 1862 | 290 | 282 | 1786 | 252 | 248 | 2410 | 197 | 158 | 2147 | 179 | 10 |
| 15 03 5 | 2673 | 284 | 281 | 2049 | 252 | 193 | 2350 | 253 | 221 | 262 | 205 | 233 |
| 15 03 10 | 2892 | 359 | 282 | 2303 | 291 | 243 | 2350 | 253 | 221 | 284 | 218 | 266 |
| 15 03 25 | 1494 | 185 | 252 | 1317 | 204 | 204 | 1113 | 140 | 102 | 1046 | 163 | 131 |
| 15 03 50 | 942 | 204 | 210 | 969 | 146 | 151 | 816 | 113 | 119 | 710 | 92 | 108 |
| 15 03 100 | 1064 | 198 | 212 | 996 | 155 | 178 | 890 | 113 | 134 | 762 | 103 | 115 |
| 15 04 0 | 1120 | 188 | 244 | 1107 | 159 | 191 | 898 | 144 | 179 | 789 | 139 | 138 |
| 15 04 5 | 1204 | 201 | 231 | 1107 | 159 | 184 | 1742 | 144 | 117 | 1358 | 179 | 90 |
| 15 04 10 | 1822 | 219 | 245 | 1197 | 169 | 214 | 1265 | 144 | 161 | 1190 | 122 | 124 |
| 15 04 25 | 833 | 126 | 192 | 640 | 89 | 165 | 571 | 57 | 134 | 455 | 65 | 108 |
| 15 04 50 | 1681 | 251 | 238 | 1526 | 208 | 233 | 1410 | 172 | 195 | 1415 | 147 | 141 |
| 15 04 62 | 1743 | 257 | 253 | 1496 | 218 | 206 | 1410 | 172 | 174 | 1312 | 153 | 146 |
| 15 05 0 | 1556 | 201 | 201 | 987 | 159 | 176 | 979 | 144 | 134 | 825 | 108 | 104 |
| 15 05 5 | 1224 | 188 | 217 | 1137 | 208 | 182 | 1161 | 317 | 146 | 836 | 124 | 139 |
| 15 05 10 | 1308 | 219 | 249 | 1347 | 169 | 178 | 1077 | 144 | 150 | 911 | 124 | 122 |
| 15 05 15 | 1204 | 194 | 223 | 1077 | 139 | 172 | 816 | 87 | 143 | 918 | 106 | 106 |
| 15 05 25 | 830 | 157 | 211 | 860 | 119 | 154 | 734 | 87 | 535 | 620 | 81 | 90 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 | 845 | 890 | 8135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 15 06 0 | 1250 | 216 | 223 | 1190 | 156 | 176 | 1087 | 118 | 133 | 848 | 101 | 105 |
| 15 06 5 | 1250 | 209 | 228 | 970 | 166 | 202 | 935 | 118 | 162 | 958 | 101 | 120 |
| 15 06 10 | 1912 | 182 | 161 | 1038 | 125 | 146 | 1046 | 88 | 115 | 732 | 84 | 99 |
| 15 06 15 | 1195 | 203 | 235 | 1102 | 146 | 166 | 941 | 118 | 141 | 798 | 110 | 107 |
| 15 06 20 | 1474 | 196 | 240 | 1284 | 198 | 208 | 851 | 295 | 271 | 815 | 138 | 131 |
| 15 07 0 | 1533 | 217 | 201 | 1065 | 180 | 181 | 918 | 87 | 138 | 759 | 88 | 116 |
| 15 07 5 | 1115 | 153 | 236 | 938 | 120 | 195 | 996 | 87 | 154 | 706 | 72 | 124 |
| 15 07 10 | 1031 | 178 | 209 | 878 | 120 | 170 | 996 | 87 | 114 | 713 | 99 | 110 |
| 15 07 15 | 1516 | 223 | 234 | 1362 | 171 | 188 | 1244 | 115 | 183 | 615 | 126 | 212 |
| 15 08 0 | 944 | 174 | 242 | 788 | 120 | 262 | 920 | 95 | 135 | 845 | 83 | 92 |
| 15 08 5 | 990 | 174 | 225 | 919 | 141 | 178 | 1103 | 127 | 126 | 650 | 109 | 104 |
| 15 08 10 | 1474 | 257 | 315 | 1183 | 305 | 234 | 1286 | 159 | 185 | 1235 | 127 | 125 |
| 15 08 15 | 1198 | 299 | 269 | 985 | 163 | 182 | 1010 | 127 | 153 | 910 | 114 | 119 |
| 15 09 0 | 905 | 172 | 233 | 689 | 119 | 170 | 647 | 84 | 127 | 516 | 87 | 113 |
| 15 09 5 | 1495 | 242 | 293 | 1406 | 228 | 197 | 1296 | 169 | 174 | 1240 | 147 | 133 |
| 15 09 10 | 3707 | 585 | 438 | 3975 | 476 | 340 | 3574 | 450 | 319 | 2894 | 395 | 251 |
| 16 01 0 | 950 | 176 | 209 | 873 | 140 | 161 | 1062 | 113 | 185 | 713 | 88 | 107 |
| 16 01 5 | 970 | 187 | 228 | 922 | 148 | 177 | 1222 | 150 | 204 | 727 | 99 | 112 |
| 16 01 10 | 2167 | 234 | 226 | 1455 | 227 | 193 | 928 | 187 | 272 | 957 | 120 | 142 |
| 16 01 15 | 2159 | 258 | 247 | 1582 | 201 | 181 | 1944 | 263 | 248 | 2846 | 166 | 74 |
| 16 02 0 | 1235 | 168 | 197 | 898 | 144 | 166 | 796 | 87 | 123 | 617 | 88 | 106 |
| 16 02 5 | 916 | 162 | 213 | 782 | 125 | 172 | 756 | 87 | 126 | 1003 | 98 | 185 |
| 16 02 10 | 1279 | 198 | 229 | 1319 | 163 | 172 | 1326 | 115 | 138 | 1029 | 114 | 172 |
| 16 02 15 | 1961 | 241 | 220 | 1319 | 278 | 199 | 1161 | 115 | 146 | 1019 | 114 | 120 |
| 16 03 0 | 1200 | 210 | 223 | 1150 | 160 | 170 | 935 | 118 | 141 | 894 | 110 | 109 |
| 16 03 5 | 1558 | 267 | 263 | 1392 | 230 | 222 | 1444 | 177 | 178 | 1357 | 185 | 140 |
| 16 03 10 | 1893 | 331 | 255 | 1629 | 200 | 203 | 1527 | 147 | 174 | 1597 | 160 | 26 |
| 16 03 23 | 1488 | 286 | 230 | 1378 | 191 | 187 | 2210 | 147 | 99 | 1198 | 146 | 107 |
| 16 04 0 | 1642 | 256 | 268 | 1380 | 212 | 224 | 1262 | 203 | 200 | 1130 | 153 | 157 |
| 16 04 5 | 1619 | 241 | 282 | 1245 | 167 | 184 | 1554 | 135 | 138 | 1259 | 0 | 129 |
| 16 04 10 | 1570 | 277 | 313 | 1380 | 224 | 263 | 1943 | 405 | 285 | 1296 | 150 | 137 |
| 16 04 23 | 1450 | 234 | 339 | 1245 | 167 | 198 | 1166 | 135 | 157 | 1093 | 131 | 135 |
| 16 05 0 | 1450 | 219 | 237 | 1058 | 149 | 181 | 1275 | 147 | 172 | 858 | 115 | 116 |
| 16 05 5 | 1836 | 226 | 243 | 1347 | 180 | 234 | 1699 | 185 | 150 | 1098 | 136 | 127 |
| 16 05 10 | 1397 | 226 | 259 | 1062 | 170 | 196 | 1064 | 185 | 182 | 929 | 127 | 125 |
| 16 05 25 | 1233 | 219 | 255 | 996 | 159 | 244 | 849 | 111 | 166 | 893 | 109 | 118 |
| 16 05 60 | 1715 | 270 | 290 | 1988 | 202 | 179 | 1594 | 221 | 208 | 1338 | 169 | 134 |
| 16 06 0 | 2148 | 347 | 265 | 1444 | 229 | 229 | 1562 | 159 | 171 | 695 | 160 | 79 |
| 16 06 5 | 1599 | 249 | 250 | 1444 | 305 | 167 | 1311 | 127 | 138 | 1161 | 130 | 124 |
| 16 06 10 | 1649 | 242 | 328 | 1478 | 174 | 204 | 1562 | 159 | 148 | 548 | 178 | 161 |

CRUISE NASA2 SEPT 1977

| SAMPLE ID | 400 NANOMETERS | | | 450 NANOMETERS | | | 500 NANOMETERS | | | 550 NANOMETERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B45 | B90 | B135 | B45 | B90 | B135 | B45 | 390 | B135 | B45 | B90 | B135 |
| | VOLUME SCATTERING FUNCTION X 100000 | | | | | | | | | | | |
| 16 06 25 | 2246 | 234 | 223 | 1360 | 163 | 179 | 1103 | 95 | 193 | 1001 | 115 | 36 |
| 16 06 50 | 706 | 136 | 220 | 560 | 87 | 157 | 226 | 64 | 124 | 339 | 51 | 93 |
| 16 06 75 | 1049 | 191 | 219 | 788 | 141 | 146 | 644 | 95 | 126 | 660 | 85 | 91 |
| 16 07 0 | 1269 | 212 | 260 | 1183 | 153 | 204 | 1103 | 127 | 171 | 977 | 110 | 130 |
| 16 07 5 | 1292 | 178 | 220 | 1149 | 163 | 174 | 1286 | 95 | 115 | 1010 | 92 | 112 |
| 16 07 10 | 1927 | 281 | 300 | 1543 | 239 | 247 | 1562 | 191 | 216 | 1613 | 237 | 180 |
| 16 07 25 | 907 | 130 | 273 | 985 | 153 | 237 | 920 | 127 | 158 | 1010 | 104 | 127 |
| 16 07 50 | 465 | 123 | 204 | 415 | 76 | 165 | 859 | 32 | 93 | 315 | 48 | 94 |
| 16 07 100 | 2330 | 356 | 318 | 2312 | 327 | 255 | 2021 | 256 | 238 | 1789 | 241 | 41 |
| 16 08 0 | 1539 | 219 | 228 | 1253 | 166 | 187 | 1444 | 147 | 137 | 1042 | 158 | 132 |
| 16 08 5 | 1743 | 226 | 231 | 1621 | 166 | 169 | 1190 | 147 | 150 | 1074 | 120 | 136 |
| 16 08 10 | 1884 | 212 | 220 | 1686 | 177 | 173 | 1359 | 147 | 141 | 1205 | 190 | 126 |
| 16 08 25 | 638 | 153 | 217 | 626 | 104 | 160 | 596 | 59 | 117 | 430 | 58 | 107 |
| 16 08 50 | 462 | 113 | 197 | 381 | 73 | 143 | 293 | 29 | 111 | 289 | 41 | 89 |
| 16 08 100 | 2261 | 339 | 295 | 2139 | 280 | 239 | 1869 | 237 | 199 | 1757 | 204 | 42 |

# NEAR-FORWARD ANGLE SCATTERING MEASUREMENTS

## Near Forward Angle Volume Scattering Functions

Near forward angle volume scattering function measurements were made using the narrow angle scattering meter as described by Spinrad, Zaneveld and Pak (1978). The volume scattering function is defined as the radiant intensity from a volume element in a given direction per unit of irradiance on the volume and per unit volume (Jerlov, 1976). That is:

$$\beta(\theta) = \frac{dI(\theta)}{E\ dv}$$

where $dI(\theta)$ = scattered radiant intensity at angle $\theta$ (watts/steradian)

$E$ = incident irradiance (watts/$m^2$)

$dv$ = volume element from which $dI(\theta)$ is scattered ($m^3$)

To obtain the values of $\beta(\theta)$ using the narrow angle scattering meter it was necessary to use two concentrations of the sample within the scattering meter. The second sample concentration used was always double the first concentration. In the data tables the heading marked VOL indicates the number of milliliters of the ocean water sample that were added to the clean water in the narrow angle scattering meter to create the first sample concentration. The rest of the headings are defined as follows:

| | |
|---|---|
| DATE | The month (in all cases September) and day the station was taken in 1977 |
| STATION NUMBER | The ordered number of the station on that date |
| DEPTH | The depth of the sample, in meters. The word "ozone" indicates a sample that was subjected to three minutes of ozone bubbling. |
| $\theta$ | The angle, in degrees at which the volume scattering function is measured. |

| | |
|---|---|
| $\beta(\theta)$ | The volume scattering function at angle $\theta$. Values are normalized by dividing the actual measured $\beta(\theta)$ by the volume of sample in the first concentration, VOL. In order to obtain the actual $\beta(\theta)$ of any given sample, the value of $\beta(\theta)$ listed in these tables should be multiplied by 2400. The values in the tables represent the value of the volume scattering function of one milliliter of the sample. The total volume of the sample container is 2400 milliliters. |
| Lat | The latitude of the station |
| Long | The longitude of the station |

## REFERENCES


Jerlov, N. G. 1976, Marine Optics, Elsevier Publishing Co., N.Y., 231 pp.

Spinrad, R. W., Zaneveld, J. R. V. and Pak, H., Volume scattering function of suspended particulate matter at near-forward angles: A comparison of experimental and theoretical values, Applied Optics, Vol. 17, p. 1125, April 1, 1978.

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-6 | 5 | 0 | 0.10 | 30 | 1.4382 | 36-46.8 | 122-01.0 |
| | | | 0.15 | | 0.1929 | | |
| | | | 0.20 | | 0.1845 | | |
| | | | 0.25 | | 0.1065 | | |
| | | | 0.30 | | 0.0914 | | |
| | | | 0.35 | | 0.0688 | | |
| | | | 0.40 | | 0.0470 | | |
| | | | 0.45 | | 0.0545 | | |
| | | | 0.50 | | 0.0436 | | |
| 9-7 | 1 | 5 | 0.10 | 30 | 3.1156 | 36-57.2 | 121-55.3 |
| | | | 0.15 | | 0.5050 | | |
| | | | 0.20 | | 0.2640 | | |
| | | | 0.25 | | 0.1847 | | |
| | | | 0.30 | | 0.1405 | | |
| | | | 0.35 | | 0.1048 | | |
| | | | 0.40 | | 0.0785 | | |
| | | | 0.45 | | 0.0881 | | |
| | | | 0.50 | | 0.0703 | | |
| 9-7 | 2 | 3 | 0.10 | 30 | * | 36-56.3 | 121-55.6 |
| | | | 0.15 | | 0.1845 | | |
| | | | 0.20 | | 0.1199 | | |
| | | | 0.25 | | 0.0923 | | |
| | | | 0.30 | | 0.0923 | | |
| | | | 0.35 | | 0.0738 | | |
| | | | 0.40 | | 0.0738 | | |
| | | | 0.45 | | 0.0554 | | |
| | | | 0.50 | | 0.0461 | | |
| 9-7 | 3 | 5 | 0.10 | 30 | 0.3150 | 36-55.3 | 121-56.4 |
| | | | 0.15 | | 0.3678 | | |
| | | | 0.20 | | 0.2033 | | |
| | | | 0.25 | | 0.2179 | | |
| | | | 0.30 | | 0.1610 | | |
| | | | 0.35 | | 0.1233 | | |
| | | | 0.40 | | 0.0948 | | |
| | | | 0.45 | | 0.0758 | | |
| | | | 0.50 | | 0.0479 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-7 | 4 | 8 | 0.10 | 30 | 2.2631 | 36-54.3 | 121-56.7 |
| | | | 0.15 | | 1.2259 | | |
| | | | 0.20 | | 0.8204 | | |
| | | | 0.25 | | 0.6305 | | |
| | | | 0.30 | | 0.2075 | | |
| | | | 0.35 | | 0.1603 | | |
| | | | 0.40 | | 0.1415 | | |
| | | | 0.45 | | 0.1037 | | |
| | | | 0.50 | | 0.1226 | | |
| 9-8 | 1 | 8 | 0.10 | 30 | 5.3776 | 36-54.4 | 121-57.2 |
| | | | 0.15 | | 2.0007 | | |
| | | | 0.20 | | 1.0869 | | |
| | | | 0.25 | | 0.5831 | | |
| | | | 0.30 | | 0.3361 | | |
| | | | 0.35 | | 0.2225 | | |
| | | | 0.40 | | 0.1838 | | |
| | | | 0.45 | | 0.1716 | | |
| | | | 0.50 | | 0.1611 | | |
| 9-8 | 1 | 13 | 0.10 | 30 | 2.7620 | 36-46.5 | 122-01.2 |
| | | | 0.15 | | 0.5482 | | |
| | | | 0.20 | | 0.2281 | | |
| | | | 0.25 | | 0.2827 | | |
| | | | 0.30 | | 0.2158 | | |
| | | | 0.35 | | 0.1504 | | |
| | | | 0.40 | | 0.0778 | | |
| | | | 0.45 | | 0.0593 | | |
| | | | 0.50 | | 0.0673 | | |
| 9-8 | 2 | 8 | 0.10 | 30 | 2.9743 | 36-53.4 | 121-57.3 |
| | | | 0.15 | | 0.6977 | | |
| | | | 0.20 | | 0.3158 | | |
| | | | 0.25 | | 0.2112 | | |
| | | | 0.30 | | 0.1348 | | |
| | | | 0.35 | | 0.1026 | | |
| | | | 0.40 | | 0.0905 | | |
| | | | 0.45 | | 0.0794 | | |
| | | | 0.50 | | 0.0513 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | β(θ) ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-8 | 2 | 18 | 0.10 | 30 | * | 36-53.4 | 121-57.3 |
| | | | 0.15 | | 0.9398 | | |
| | | | 0.20 | | 0.4168 | | |
| | | | 0.25 | | 0.1408 | | |
| | | | 0.30 | | 0.1531 | | |
| | | | 0.35 | | 0.1024 | | |
| | | | 0.40 | | 0.0996 | | |
| | | | 0.45 | | 0.0621 | | |
| | | | 0.50 | | 0.0339 | | |
| 9-8 | 3 | 15 | 0.10 | 30 | 1.8939 | 36-52.0 | 121-58.2 |
| | | | 0.15 | | 0.6909 | | |
| | | | 0.20 | | 0.3502 | | |
| | | | 0.25 | | 0.1762 | | |
| | | | 0.30 | | 0.0909 | | |
| | | | 0.35 | | 0.0795 | | |
| | | | 0.40 | | 0.0420 | | |
| | | | 0.45 | | 0.0322 | | |
| | | | 0.50 | | 0.0311 | | |
| 9-8 | 3 | 60 | 0.10 | 30 | 3.1500 | 36-52.0 | 121-58.2 |
| | | | 0.15 | | 0.5681 | | |
| | | | 0.20 | | 0.1739 | | |
| | | | 0.25 | | 0.0747 | | |
| | | | 0.30 | | 0.0556 | | |
| | | | 0.35 | | 0.0285 | | |
| | | | 0.40 | | 0.0370 | | |
| | | | 0.45 | | 0.0280 | | |
| | | | 0.50 | | 0.0278 | | |
| 9-8 | 4 | 25 | 0.10 | 30 | 1.0756 | 36-50.5 | 121-59.0 |
| | | | 0.15 | | 0.3112 | | |
| | | | 0.20 | | 0.1804 | | |
| | | | 0.25 | | 0.1538 | | |
| | | | 0.30 | | 0.1303 | | |
| | | | 0.35 | | 0.0813 | | |
| | | | 0.40 | | 0.0707 | | |
| | | | 0.45 | | 0.0507 | | |
| | | | 0.50 | | 0.0507 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-8 | 4 | 70 | 0.10 | 30 | * | 36-50.5 | 121-59.0 |
| | | | 0.15 | | * | | |
| | | | 0.20 | | 0.4565 | | |
| | | | 0.25 | | 0.5731 | | |
| | | | 0.30 | | 0.1828 | | |
| | | | 0.35 | | 0.1791 | | |
| | | | 0.40 | | 0.1318 | | |
| | | | 0.45 | | 0.1438 | | |
| | | | 0.50 | | 0.1456 | | |
| 9-8 | 5 | 50 | 0.10 | 30 | 1.8280 | 36-48.5 | 122-00.2 |
| | | | 0.15 | | 0.7165 | | |
| | | | 0.20 | | 0.1934 | | |
| | | | 0.25 | | 0.0943 | | |
| | | | 0.30 | | 0.0719 | | |
| | | | 0.35 | | 0.0426 | | |
| | | | 0.40 | | 0.0501 | | |
| | | | 0.45 | | 0.0397 | | |
| | | | 0.50 | | 0.0213 | | |
| 9-8 | 5 | 95 | 0.10 | 30 | 0.8840 | 36-48.5 | 122-00.2 |
| | | | 0.15 | | 0.0884 | | |
| | | | 0.20 | | 0.0877 | | |
| | | | 0.25 | | 0.0796 | | |
| | | | 0.30 | | 0.0354 | | |
| | | | 0.35 | | 0.0089 | | |
| | | | 0.40 | | 0.0177 | | |
| | | | 0.45 | | 0.0089 | | |
| | | | 0.50 | | 0.0089 | | |
| 9-8 | 6 | 50 | 0.10 | 30 | * | 36-46.5 | 122-01.2 |
| | | | 0.15 | | 0.5354 | | |
| | | | 0.20 | | 0.3497 | | |
| | | | 0.25 | | 0.1214 | | |
| | | | 0.30 | | 0.0799 | | |
| | | | 0.35 | | 0.0521 | | |
| | | | 0.40 | | 0.0427 | | |
| | | | 0.45 | | 0.0466 | | |
| | | | 0.50 | | 0.0286 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1} sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-8 | 6 | 95 | 0.10 | 30 | 1.1042 | 36-46.5 | 122-01.2 |
| | | | 0.15 | | 0.7400 | | |
| | | | 0.20 | | 0.4613 | | |
| | | | 0.25 | | 0.1358 | | |
| | | | 0.30 | | 0.0831 | | |
| | | | 0.35 | | 0.0352 | | |
| | | | 0.40 | | 0.0341 | | |
| | | | 0.45 | | 0.0047 | | |
| | | | 0.50 | | 0.0133 | | |
| 9-9 | 1 | 50 | 0.10 | 30 | 1.2294 | 36-46.8 | 122-01.2 |
| | | | 0.15 | | 0.6577 | | |
| | | | 0.20 | | 0.0990 | | |
| | | | 0.25 | | 0.0796 | | |
| | | | 0.30 | | 0.0377 | | |
| | | | 0.35 | | 0.0307 | | |
| | | | 0.40 | | 0.0271 | | |
| | | | 0.45 | | 0.0324 | | |
| | | | 0.50 | | 0.0242 | | |
| 9-9 | 2 | 50 | 0.10 | 30 | 0.6966 | 36-48.5 | 122-00.1 |
| | | | 0.15 | | 0.0684 | | |
| | | | 0.20 | | 0.0574 | | |
| | | | 0.25 | | 0.0213 | | |
| | | | 0.30 | | 0.0200 | | |
| | | | 0.35 | | 0.0195 | | |
| | | | 0.40 | | 0.0278 | | |
| | | | 0.45 | | 0.0274 | | |
| | | | 0.50 | | 0.0273 | | |
| 9-9 | 3 | 5 | 0.10 | 30 | 0.9245 | 36-50.3 | 121-58.6 |
| | | | 0.15 | | 0.2302 | | |
| | | | 0.20 | | 0.0668 | | |
| | | | 0.25 | | 0.0984 | | |
| | | | 0.30 | | 0.0775 | | |
| | | | 0.35 | | 0.0488 | | |
| | | | 0.40 | | 0.0392 | | |
| | | | 0.45 | | 0.0390 | | |
| | | | 0.50 | | 0.0388 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | β(θ) ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-9 | 4 | 5 | 0.10 | 30 | 9.6744 | 36-52.2 | 121-58.2 |
| | | | 0.15 | | 0.4325 | | |
| | | | 0.20 | | 0.1945 | | |
| | | | 0.25 | | 0.0892 | | |
| | | | 0.30 | | 0.0625 | | |
| | | | 0.35 | | 0.0620 | | |
| | | | 0.40 | | 0.0532 | | |
| | | | 0.45 | | 0.0357 | | |
| | | | 0.50 | | 0.0184 | | |
| 9-9 | 5 | 5 | 0.10 | 30 | 1.7832 | 36-53.4 | 121-57.4 |
| | | | 0.15 | | 0.1264 | | |
| | | | 0.20 | | 0.0481 | | |
| | | | 0.25 | | 0.0585 | | |
| | | | 0.30 | | 0.0472 | | |
| | | | 0.35 | | 0.0349 | | |
| | | | 0.40 | | 0.0245 | | |
| | | | 0.45 | | 0.0236 | | |
| | | | 0.50 | | 0.0142 | | |
| 9-9 | 6 | 5 | 0.10 | 30 | 0.7054 | 36-54.5 | 121-56.9 |
| | | | 0.15 | | 0.4262 | | |
| | | | 0.20 | | 0.2317 | | |
| | | | 0.25 | | 0.1298 | | |
| | | | 0.30 | | 0.0926 | | |
| | | | 0.35 | | 0.0739 | | |
| | | | 0.40 | | 0.0465 | | |
| | | | 0.45 | | 0.0461 | | |
| | | | 0.50 | | 0.0371 | | |
| 9-9 | 7 | 5 | 0.10 | 30 | 0.5700 | 36-55.2 | 121-56.3 |
| | | | 0.15 | | 0.1570 | | |
| | | | 0.20 | | 0.0661 | | |
| | | | 0.25 | | 0.0386 | | |
| | | | 0.30 | | 0.0294 | | |
| | | | 0.35 | | 0.0244 | | |
| | | | 0.40 | | 0.0198 | | |
| | | | 0.45 | | 0.0283 | | |
| | | | 0.50 | | 0.0279 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-9 | 7 | 16 | 0.10 | 30 | 0.4431 | 36-55.2 | 121-56.3 |
| | | | 0.15 | | 0.2092 | | |
| | | | 0.20 | | 0.2039 | | |
| | | | 0.25 | | 0.0687 | | |
| | | | 0.30 | | 0.0494 | | |
| | | | 0.35 | | 0.0312 | | |
| | | | 0.40 | | 0.0349 | | |
| | | | 0.45 | | 0.0385 | | |
| | | | 0.50 | | 0.0297 | | |
| 9-11 | 1 | 5 | 0.10 | 40 | 0.0889 | 36-58.2 | 121-55.2 |
| | | | 0.15 | | 0.0614 | | |
| | | | 0.20 | | 0.0394 | | |
| | | | 0.25 | | 0.0365 | | |
| | | | 0.30 | | 0.0354 | | |
| | | | 0.35 | | 0.0347 | | |
| | | | 0.40 | | 0.0280 | | |
| | | | 0.45 | | 0.0213 | | |
| | | | 0.50 | | 0.0149 | | |
| 9-11 | 2 | 5 | 0.10 | 40 | 0.6426 | 36-56.2 | 121-55.8 |
| | | | 0.15 | | 0.2610 | | |
| | | | 0.20 | | 0.0906 | | |
| | | | 0.25 | | 0.0581 | | |
| | | | 0.30 | | 0.0575 | | |
| | | | 0.35 | | 0.0323 | | |
| | | | 0.40 | | 0.0321 | | |
| | | | 0.45 | | 0.0257 | | |
| | | | 0.50 | | 0.0256 | | |
| 9-11 | 3 | 0 | 0.10 | 40 | 0.2498 | 36-43.0 | 122-13.5 |
| | | | 0.15 | | 0.1439 | | |
| | | | 0.20 | | 0.0410 | | |
| | | | 0.25 | | 0.0545 | | |
| | | | 0.30 | | 0.0365 | | |
| | | | 0.35 | | 0.0205 | | |
| | | | 0.40 | | 0.0260 | | |
| | | | 0.45 | | 0.0185 | | |
| | | | 0.50 | | 0.0175 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-11 | 3 | 50 | 0.10 | 50 | 0.1774 | 36-43.0 | 122-13.5 |
| | | | 0.15 | | 0.0705 | | |
| | | | 0.20 | | 0.0300 | | |
| | | | 0.25 | | 0.0182 | | |
| | | | 0.30 | | 0.0151 | | |
| | | | 0.35 | | 0.0177 | | |
| | | | 0.40 | | 0.0176 | | |
| | | | 0.45 | | 0.0175 | | |
| | | | 0.50 | | 0.0118 | | |
| 9-11 | 3 | 100 | 0.10 | 60 | 1.9583 | 36-43.0 | 122-13.5 |
| | | | 0.15 | | 0.1113 | | |
| | | | 0.20 | | 0.0532 | | |
| | | | 0.25 | | 0.0422 | | |
| | | | 0.30 | | 0.0311 | | |
| | | | 0.35 | | 0.0131 | | |
| | | | 0.40 | | 0.0154 | | |
| | | | 0.45 | | 0.0109 | | |
| | | | 0.50 | | 0.0087 | | |
| 9-11 | 3 | 250 | 0.10 | 70 | 0.7689 | 36-43.0 | 122-13.5 |
| | | | 0.15 | | 0.1233 | | |
| | | | 0.20 | | 0.0508 | | |
| | | | 0.25 | | 0.0360 | | |
| | | | 0.30 | | 0.0311 | | |
| | | | 0.35 | | 0.0262 | | |
| | | | 0.40 | | 0.0220 | | |
| | | | 0.45 | | 0.0215 | | |
| | | | 0.50 | | 0.0175 | | |
| 9-11 | 3 | 500 | 0.10 | 80 | 0.6296 | 36-43.0 | 122-13.5 |
| | | | 0.15 | | 0.2013 | | |
| | | | 0.20 | | 0.0466 | | |
| | | | 0.25 | | 0.0393 | | |
| | | | 0.30 | | 0.0293 | | |
| | | | 0.35 | | 0.0228 | | |
| | | | 0.40 | | 0.0164 | | |
| | | | 0.45 | | 0.0131 | | |
| | | | 0.50 | | 0.0131 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-11 | 4 | 0 | 0.10 | 40 | 0.5922 | 36-43.2 | 122-13.5 |
| | | | 0.15 | | 0.1023 | | |
| | | | 0.20 | | 0.0946 | | |
| | | | 0.25 | | 0.0314 | | |
| | | | 0.30 | | 0.0025 | | |
| | | | 0.35 | | 0.0005 | | |
| | | | 0.40 | | 0.0061 | | |
| | | | 0.45 | | 0.0111 | | |
| | | | 0.50 | | 0.0155 | | |
| 9-11 | 4 | 50 | 0.10 | 50 | 0.2039 | 36-43.2 | 122-13.5 |
| | | | 0.15 | | 0.0827 | | |
| | | | 0.20 | | 0.0485 | | |
| | | | 0.25 | | 0.0293 | | |
| | | | 0.30 | | 0.0173 | | |
| | | | 0.35 | | 0.0148 | | |
| | | | 0.40 | | 0.0147 | | |
| | | | 0.45 | | 0.0146 | | |
| | | | 0.50 | | 0.0099 | | |
| 9-11 | 4 | 100 | 0.10 | 60 | 0.1518 | 36-43.2 | 122-13.5 |
| | | | 0.15 | | 0.0559 | | |
| | | | 0.20 | | 0.0467 | | |
| | | | 0.25 | | 0.0460 | | |
| | | | 0.30 | | 0.0377 | | |
| | | | 0.35 | | 0.0375 | | |
| | | | 0.40 | | 0.0374 | | |
| | | | 0.45 | | 0.0293 | | |
| | | | 0.50 | | 0.0251 | | |
| 9-11 | 4 | 250 | 0.10 | 70 | 0.2192 | 36-43.2 | 122-13.5 |
| | | | 0.15 | | 0.0746 | | |
| | | | 0.20 | | 0.0521 | | |
| | | | 0.25 | | 0.0409 | | |
| | | | 0.30 | | 0.0299 | | |
| | | | 0.35 | | 0.0259 | | |
| | | | 0.40 | | 0.0222 | | |
| | | | 0.45 | | 0.0149 | | |
| | | | 0.50 | | 0.0113 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-11 | 4 | 500 | 0.10 | 80 | 0.5304 | 36-43.2 | 122-13.5 |
| | | | 0.15 | | 0.1945 | | |
| | | | 0.20 | | 0.0727 | | |
| | | | 0.25 | | 0.0422 | | |
| | | | 0.30 | | 0.0271 | | |
| | | | 0.35 | | 0.0211 | | |
| | | | 0.40 | | 0.0149 | | |
| | | | 0.45 | | 0.0183 | | |
| | | | 0.50 | | 0.0088 | | |
| 9-12 | 1 | 5 | 0.10 | 40 | 0.1524 | 36-47.0 | 122-01.9 |
| | | | 0.15 | | 0.1031 | | |
| | | | 0.20 | | 0.0896 | | |
| | | | 0.25 | | 0.0433 | | |
| | | | 0.30 | | 0.0478 | | |
| | | | 0.35 | | 0.0305 | | |
| | | | 0.40 | | 0.0415 | | |
| | | | 0.45 | | 0.0326 | | |
| | | | 0.50 | | 0.0316 | | |
| 9-12 | 2 | 5 | 0.10 | 40 | * | 36-43.3 | 122-00.2 |
| | | | 0.15 | | 0.2977 | | |
| | | | 0.20 | | 0.0782 | | |
| | | | 0.25 | | 0.0847 | | |
| | | | 0.30 | | 0.0659 | | |
| | | | 0.35 | | 0.0429 | | |
| | | | 0.40 | | 0.0278 | | |
| | | | 0.45 | | 0.0256 | | |
| | | | 0.50 | | 0.0178 | | |
| 9-12 | 3 | 5 | 0.10 | 40 | 0.1559 | 36-50.3 | 121-59.1 |
| | | | 0.15 | | 0.0920 | | |
| | | | 0.20 | | 0.0250 | | |
| | | | 0.25 | | 0.0286 | | |
| | | | 0.30 | | 0.0404 | | |
| | | | 0.35 | | 0.0335 | | |
| | | | 0.40 | | 0.0203 | | |
| | | | 0.45 | | 0.0201 | | |
| | | | 0.50 | | 0.0136 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-12 | 4 | 5 | 0.10 | 40 | 0.2289 | 36-52.0 | 121-58.3 |
| | | | 0.15 | | 0.0748 | | |
| | | | 0.20 | | 0.1115 | | |
| | | | 0.25 | | 0.0982 | | |
| | | | 0.30 | | 0.0738 | | |
| | | | 0.35 | | 0.0379 | | |
| | | | 0.40 | | 0.0367 | | |
| | | | 0.45 | | 0.0228 | | |
| | | | 0.50 | | 0.0156 | | |
| 9-12 | 5 | 5 | 0.10 | 40 | * | 36-53.5 | 121-57.3 |
| | | | 0.15 | | 0.1126 | | |
| | | | 0.20 | | 0.0248 | | |
| | | | 0.25 | | 0.0189 | | |
| | | | 0.30 | | 0.0225 | | |
| | | | 0.35 | | 0.0151 | | |
| | | | 0.40 | | 0.0149 | | |
| | | | 0.45 | | 0.0148 | | |
| | | | 0.50 | | 0.0148 | | |
| 9-12 | 6 | 5 | 0.10 | 50 | 0.1225 | 36-54.5 | 121-56.7 |
| | | | 0.15 | | 0.1308 | | |
| | | | 0.20 | | 0.1783 | | |
| | | | 0.25 | | 0.0478 | | |
| | | | 0.30 | | 0.0464 | | |
| | | | 0.35 | | 0.0293 | | |
| | | | 0.40 | | 0.0234 | | |
| | | | 0.45 | | 0.0177 | | |
| | | | 0.50 | | 0.0230 | | |
| 9-12 | 7 | 5 | 0.10 | 50 | 0.5516 | 36-55.2 | 121-56.3 |
| | | | 0.15 | | 0.0794 | | |
| | | | 0.20 | | 0.0163 | | |
| | | | 0.25 | | 0.0242 | | |
| | | | 0.30 | | 0.0233 | | |
| | | | 0.35 | | 0.0176 | | |
| | | | 0.40 | | 0.0119 | | |
| | | | 0.45 | | 0.0117 | | |
| | | | 0.50 | | 0.0117 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-12 | 8 | 5 | 0.10 | 50 | 0.2624 | 36-56.2 | 121-55.9 |
| | | | 0.15 | | 0.0921 | | |
| | | | 0.20 | | 0.0596 | | |
| | | | 0.25 | | 0.0403 | | |
| | | | 0.30 | | 0.0289 | | |
| | | | 0.35 | | 0.0340 | | |
| | | | 0.40 | | 0.0284 | | |
| | | | 0.45 | | 0.0199 | | |
| | | | 0.50 | | 0.0171 | | |
| 9-13 | 1 | 5 | 0.10 | 50 | 0.4157 | 36-59.2 | 121-55.4 |
| | | | 0.15 | | 0.2858 | | |
| | | | 0.20 | | 0.1559 | | |
| | | | 0.25 | | 0.1195 | | |
| | | | 0.30 | | 0.0935 | | |
| | | | 0.35 | | 0.0676 | | |
| | | | 0.40 | | 0.0468 | | |
| | | | 0.45 | | 0.0260 | | |
| | | | 0.50 | | 0.0156 | | |
| 9-13 | 2 | 5 | 0.10 | 50 | 0.8487 | 36-56.0 | 121-56.0 |
| | | | 0.15 | | 0.3023 | | |
| | | | 0.20 | | 0.1114 | | |
| | | | 0.25 | | 0.0531 | | |
| | | | 0.30 | | 0.0371 | | |
| | | | 0.35 | | 0.0265 | | |
| | | | 0.40 | | 0.0212 | | |
| | | | 0.45 | | 0.0106 | | |
| | | | 0.50 | | 0.0106 | | |
| 9-13 | 3 | 5 | 0.10 | 50 | 0.8026 | 36-55.3 | 121-56.4 |
| | | | 0.15 | | 0.2376 | | |
| | | | 0.20 | | 0.1056 | | |
| | | | 0.25 | | 0.0775 | | |
| | | | 0.30 | | 0.0608 | | |
| | | | 0.35 | | 0.0282 | | |
| | | | 0.40 | | 0.0225 | | |
| | | | 0.45 | | 0.0222 | | |
| | | | 0.50 | | 0.0168 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | β(θ) ($m^{-1}$ $sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-13 | 4 | 0 | 0.10 | 50 | 0.0848 | 36-54.4 | 121-56.9 |
| | | | 0.15 | | 0.0796 | | |
| | | | 0.20 | | 0.0542 | | |
| | | | 0.25 | | 0.0237 | | |
| | | | 0.30 | | 0.0043 | | |
| | | | 0.35 | | 0.0017 | | |
| | | | 0.40 | | 0.0025 | | |
| | | | 0.45 | | 0.0020 | | |
| | | | 0.50 | | 0.0068 | | |
| 9-13 | 4 | 15 | 0.10 | 50 | 0.5108 | 36-54.4 | 121-56.9 |
| | | | 0.15 | | 0.4074 | | |
| | | | 0.20 | | 0.2332 | | |
| | | | 0.25 | | 0.0634 | | |
| | | | 0.30 | | 0.0411 | | |
| | | | 0.35 | | 0.0251 | | |
| | | | 0.40 | | 0.0239 | | |
| | | | 0.45 | | 0.0180 | | |
| | | | 0.50 | | 0.0128 | | |
| 9-13 | 5 | 0 (ozone) | 0.10 | 50 | 0.2953 | 36-50.3 | 121-59.2 |
| | | | 0.15 | | 0.1528 | | |
| | | | 0.20 | | 0.0509 | | |
| | | | 0.25 | | 0.0458 | | |
| | | | 0.30 | | 0.0306 | | |
| | | | 0.35 | | 0.0255 | | |
| | | | 0.40 | | 0.0127 | | |
| | | | 0.45 | | 0.0153 | | |
| | | | 0.50 | | 0.0051 | | |
| 9-13 | 5 | 10 | 0.10 | 50 | 0.5070 | 36-50.3 | 121-59.2 |
| | | | 0.15 | | 0.3150 | | |
| | | | 0.20 | | 0.2670 | | |
| | | | 0.25 | | 0.1210 | | |
| | | | 0.30 | | 0.1140 | | |
| | | | 0.35 | | 0.0910 | | |
| | | | 0.40 | | 0.0630 | | |
| | | | 0.45 | | 0.0400 | | |
| | | | 0.50 | | 0.0180 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}$ $sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-13 | 5 | 0 | 0.10 | 50 | 0.2953 | 36-50.3 | 121-59.2 |
| | | | 0.15 | | 0.1426 | | |
| | | | 0.20 | | 0.0509 | | |
| | | | 0.25 | | 0.0458 | | |
| | | | 0.30 | | 0.0306 | | |
| | | | 0.35 | | 0.0204 | | |
| | | | 0.40 | | 0.0204 | | |
| | | | 0.45 | | 0.0153 | | |
| | | | 0.50 | | 0.0102 | | |
| 9-13 | 6 | 0 | 0.10 | 50 | 0.4350 | 36-46.7 | 122-01.2 |
| | | | 0.15 | | 0.2057 | | |
| | | | 0.20 | | 0.1263 | | |
| | | | 0.25 | | 0.0786 | | |
| | | | 0.30 | | 0.0576 | | |
| | | | 0.35 | | 0.0362 | | |
| | | | 0.40 | | 0.0312 | | |
| | | | 0.45 | | 0.0205 | | |
| | | | 0.50 | | 0.0263 | | |
| 9-13 | 6 | 10 | 0.10 | 50 | 0.5825 | 36-46.7 | 122-01.2 |
| | | | 0.15 | | 0.2690 | | |
| | | | 0.20 | | 0.2099 | | |
| | | | 0.25 | | 0.1021 | | |
| | | | 0.30 | | 0.0748 | | |
| | | | 0.35 | | 0.0513 | | |
| | | | 0.40 | | 0.0555 | | |
| | | | 0.45 | | 0.0598 | | |
| | | | 0.50 | | 0.0315 | | |
| 9-13 | 6 | 55 | 0.10 | 50 | 0.1852 | 36-46.7 | 122-01.2 |
| | | | 0.15 | | 0.0681 | | |
| | | | 0.20 | | 0.0397 | | |
| | | | 0.25 | | 0.0230 | | |
| | | | 0.30 | | 0.0201 | | |
| | | | 0.35 | | 0.0171 | | |
| | | | 0.40 | | 0.0115 | | |
| | | | 0.45 | | 0.0113 | | |
| | | | 0.50 | | 0.0167 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | β(θ) ($m^{-1}$ $sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-14 | 2 | 3 | 0.10 | 60 | 1.7430 | 36-40.7 | 121-55.3 |
| | | | 0.15 | | 0.3599 | | |
| | | | 0.20 | | 0.2522 | | |
| | | | 0.25 | | 0.1316 | | |
| | | | 0.30 | | 0.1012 | | |
| | | | 0.35 | | 0.0700 | | |
| | | | 0.40 | | 0.0627 | | |
| | | | 0.45 | | 0.0429 | | |
| | | | 0.50 | | 0.0310 | | |
| 9-14 | 3 | 5 | 0.10 | 60 | 0.4648 | 36-46.8 | 122-01.0 |
| | | | 0.15 | | 0.2645 | | |
| | | | 0.20 | | 0.0888 | | |
| | | | 0.25 | | 0.0827 | | |
| | | | 0.30 | | 0.0597 | | |
| | | | 0.35 | | 0.0500 | | |
| | | | 0.40 | | 0.0367 | | |
| | | | 0.45 | | 0.0190 | | |
| | | | 0.50 | | 0.0144 | | |
| 9-14 | 4 | 5 | 0.10 | 60 | 0.1103 | 36-48.6 | 122-00.5 |
| | | | 0.15 | | 0.2055 | | |
| | | | 0.20 | | 0.0653 | | |
| | | | 0.25 | | 0.0351 | | |
| | | | 0.30 | | 0.0262 | | |
| | | | 0.35 | | 0.0178 | | |
| | | | 0.40 | | 0.0175 | | |
| | | | 0.45 | | 0.0132 | | |
| | | | 0.50 | | 0.0091 | | |
| 9-14 | 5 | 5 | 0.10 | 60 | 0.4605 | 36-50.4 | 121-59.2 |
| | | | 0.15 | | 0.3553 | | |
| | | | 0.20 | | 0.1834 | | |
| | | | 0.25 | | 0.0711 | | |
| | | | 0.30 | | 0.0914 | | |
| | | | 0.35 | | 0.0317 | | |
| | | | 0.40 | | 0.0311 | | |
| | | | 0.45 | | 0.0264 | | |
| | | | 0.50 | | 0.0262 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}$ $sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-14 | 6 | 5 | 0.10 | 60 | 1.2470 | 36-52.1 | 121-58.2 |
| | | | 0.15 | | 0.0715 | | |
| | | | 0.20 | | 0.0376 | | |
| | | | 0.25 | | 0.0314 | | |
| | | | 0.30 | | 0.0317 | | |
| | | | 0.35 | | 0.0230 | | |
| | | | 0.40 | | 0.0226 | | |
| | | | 0.45 | | 0.0094 | | |
| | | | 0.50 | | 0.0093 | | |
| 9-15 | 1 | 5 | 0.10 | 60 | 0.3423 | 36-46.7 | 122-01.1 |
| | | | 0.15 | | 0.3536 | | |
| | | | 0.20 | | 0.1138 | | |
| | | | 0.25 | | 0.0818 | | |
| | | | 0.30 | | 0.0544 | | |
| | | | 0.35 | | 0.0606 | | |
| | | | 0.40 | | 0.0587 | | |
| | | | 0.45 | | 0.0574 | | |
| | | | 0.50 | | 0.0339 | | |
| 9-15 | 2 | 5 | 0.10 | 60 | 0.4888 | 36-48.6 | 122-00.2 |
| | | | 0.15 | | 0.2058 | | |
| | | | 0.20 | | 0.1598 | | |
| | | | 0.25 | | 0.1219 | | |
| | | | 0.30 | | 0.0794 | | |
| | | | 0.35 | | 0.0620 | | |
| | | | 0.40 | | 0.0550 | | |
| | | | 0.45 | | 0.0387 | | |
| | | | 0.50 | | 0.0233 | | |
| 9-15 | 3 | 5 | 0.10 | 60 | * | 36-50.4 | 121-59.1 |
| | | | 0.15 | | 0.2014 | | |
| | | | 0.20 | | 0.0336 | | |
| | | | 0.25 | | 0.0291 | | |
| | | | 0.30 | | 0.0277 | | |
| | | | 0.35 | | 0.0422 | | |
| | | | 0.40 | | 0.0268 | | |
| | | | 0.45 | | 0.0212 | | |
| | | | 0.50 | | 0.0109 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}$ $sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-15 | 4 | 5 | 0.10 | 60 | 0.1531 | 36-52.2 | 121-58.2 |
| | | | 0.15 | | 0.1157 | | |
| | | | 0.20 | | 0.0357 | | |
| | | | 0.25 | | 0.0466 | | |
| | | | 0.30 | | 0.0312 | | |
| | | | 0.35 | | 0.0214 | | |
| | | | 0.40 | | 0.0159 | | |
| | | | 0.45 | | 0.0155 | | |
| | | | 0.50 | | 0.0153 | | |
| 9-15 | 5 | 5 | 0.10 | 60 | 1.0608 | 36-51.2 | 121-57.9 |
| | | | 0.15 | | 0.4774 | | |
| | | | 0.20 | | 0.1459 | | |
| | | | 0.25 | | 0.1017 | | |
| | | | 0.30 | | 0.0619 | | |
| | | | 0.35 | | 0.0442 | | |
| | | | 0.40 | | 0.0310 | | |
| | | | 0.45 | | 0.0265 | | |
| | | | 0.50 | | 0.0089 | | |
| 9-15 | 6 | 5 | 0.10 | 60 | 0.7792 | 36-54.5 | 121-56.9 |
| | | | 0.15 | | 0.3501 | | |
| | | | 0.20 | | 0.1279 | | |
| | | | 0.25 | | 0.0949 | | |
| | | | 0.30 | | 0.0515 | | |
| | | | 0.35 | | 0.0388 | | |
| | | | 0.40 | | 0.0523 | | |
| | | | 0.45 | | 0.0260 | | |
| | | | 0.50 | | 0.0172 | | |
| 9-15 | 7 | 5 | 0.10 | 60 | 0.0866 | 36-55.4 | 121-56.5 |
| | | | 0.15 | | 0.0697 | | |
| | | | 0.20 | | 0.0658 | | |
| | | | 0.25 | | 0.0541 | | |
| | | | 0.30 | | 0.0387 | | |
| | | | 0.35 | | 0.0244 | | |
| | | | 0.40 | | 0.0106 | | |
| | | | 0.45 | | 0.0101 | | |
| | | | 0.50 | | 0.0097 | | |

| Date | Station Number | Depth (m) | θ (deg.) | Vol. (ml) | $\beta(\theta)$ ($m^{-1}$ $sr^{-1}$) | Lat. | Long. |
|---|---|---|---|---|---|---|---|
| 9-15 | 8 | 5 | 0.10 | 60 | 0.1302 | 36.56.3 | 121-55.7 |
| | | | 0.15 | | 0.0091 | | |
| | | | 0.20 | | 0.0662 | | |
| | | | 0.25 | | 0.0565 | | |
| | | | 0.30 | | 0.0265 | | |
| | | | 0.35 | | 0.0177 | | |
| | | | 0.40 | | 0.0175 | | |
| | | | 0.45 | | 0.0132 | | |
| | | | 0.50 | | 0.0088 | | |
| 9-15 | 9 | 5 | 0.10 | 60 | 0.8888 | 36-57.1 | 121-55.1 |
| | | | 0.15 | | 0.2760 | | |
| | | | 0.20 | | 0.1200 | | |
| | | | 0.25 | | 0.0848 | | |
| | | | 0.30 | | 0.0634 | | |
| | | | 0.35 | | 0.0361 | | |
| | | | 0.40 | | 0.0234 | | |
| | | | 0.45 | | 0.0254 | | |
| | | | 0.50 | | 0.0170 | | |

SPECTRAL BEAM TRANSMISSION

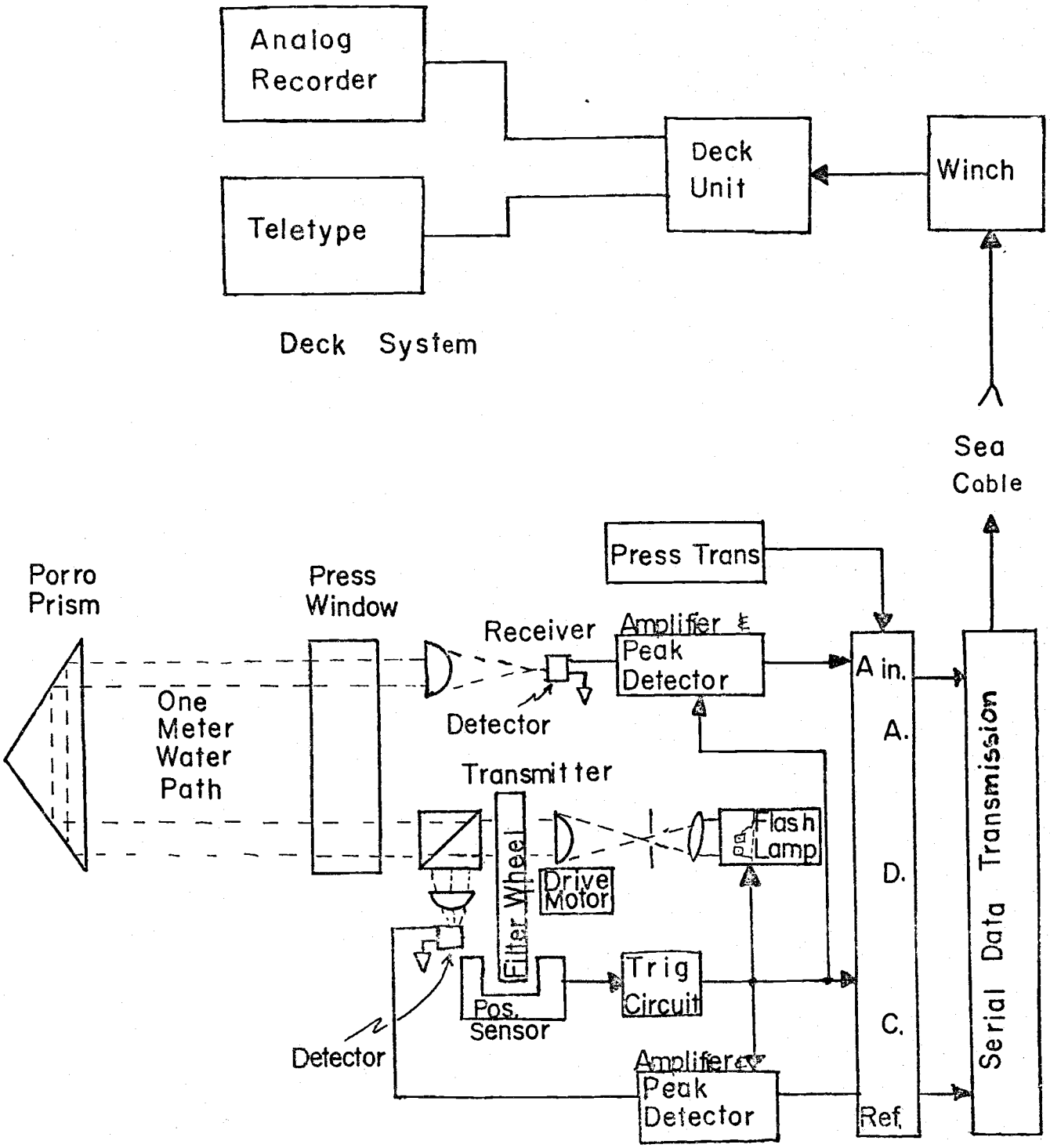
## SPECTRAL BEAM TRANSMISSOMETER

The spectral beam transmissometer (C meter) was developed by the optics group at Oregon State University. The instrument measures the attenuation of a collimated beam of light in a one meter water path. Measurements are made at 50 nm intervals from 400 nm to 650 nm

The system block diagram is shown in Figure 21. The instrument uses a pulses xenon light source which is collimated then split so that one-half the light is incident on the reference detector and the other half is incident on the folded one meter water path. Light received through the water path is amplified, peak detected and then fed through a multipleter to a ten bit radiometric analog and digital converter (ADC). The pressure transducer output signal is also fed through the multiplexer to the ADC, then the digital output of the analog to digital converter is converted to serial data and transmitted up the sea cable to the deck unit. The deck unit converts the serial digital data to parallel digital data for recording on a teletype tape punch and analog for display on multichannel analog recorder.

The instrument specifications are as follows: one data scan consists of six spectral "C" measurements, 400 nm to 650 nm, and two pressure measurements. The rotational rate of the filter wheel which controls data scan rate, is once every 2.4 seconds. The measurements are made with a ten bit analog to digital converter to obtain a resolution of 0.1%. The transmitted light beam collimation angle is 10 milliradians and the receiver acceptance angle is 0.7 degrees. The beam diameter is 20 mm and path length is one meter.

Calibration of the instrument was accomplished by calculating at each wavelength, the value the instrument should read in air to give 100% transmission in water. This value is 87.1% and was used in the computer program to reduce all transmission data in this report. Frequent checks of the air calibration before, during and after the cruise shows the repeatability of the data are better than 1%.




Spectral "C" Meter
Block Diagram

Figure 21

NASA1 MAY 1977

| STATN | OPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 03 01 | 000 | 44.1 | 49.5 | 54.4 | 51.7 | 45.0 | 40.4 |
| 03 01 | 005 | 49.3 | 52.9 | 55.3 | 52.9 | 45.9 | 40.3 |
| 03 01 | 010 | 48.2 | 51.9 | 54.4 | 51.7 | 44.7 | 39.9 |
| 03 01 | 020 | 48.6 | 52.6 | 55.1 | 52.5 | 45.5 | 40.6 |
| 03 02 | 000 | 5.9 | 6.3 | 7.5 | 8.5 | 8.5 | 8.6 |
| 03 02 | 005 | 16.7 | 19.6 | 23.5 | 20.9 | 18.3 | 16.9 |
| 03 02 | 010 | 44.8 | 48.6 | 50.8 | 49.1 | 41.9 | 37.0 |
| 03 02 | 020 | 50.7 | 55.0 | 58.4 | 55.4 | 48.0 | 42.6 |
| 03 03 | 000 | 5.7 | 5.5 | 7.3 | 7.6 | 7.2 | 5.9 |
| 03 03 | 005 | 21.6 | 23.1 | 25.2 | 23.9 | 20.9 | 18.1 |
| 03 03 | 010 | 39.8 | 44.1 | 47.5 | 45.4 | 39.0 | 34.4 |
| 03 04 | 000 | 4.1 | 4.1 | 5.1 | 5.7 | 5.1 | 4.5 |
| 03 04 | 005 | 8.6 | 9.1 | 10.5 | 10.6 | 10.7 | 9.3 |
| 03 05 | 000 | 6.3 | 6.5 | 8.2 | 8.9 | 7.4 | 6.5 |
| 03 05 | 005 | 7.4 | 8.0 | 9.0 | 9.0 | 7.6 | 6.7 |
| 03 05 | 008 | 9.2 | 9.9 | 12.6 | 13.2 | 11.7 | 11.2 |
| 03 06 | 000 | 18.3 | 19.9 | 21.0 | 21.1 | 18.8 | 15.7 |
| 03 06 | 003 | 18.5 | 20.1 | 21.7 | 22.0 | 18.7 | 16.6 |
| 03 06 | 008 | 17.9 | 19.8 | 21.3 | 21.4 | 17.8 | 16.3 |
| 03 06 | 013 | 37.0 | 41.1 | 43.7 | 43.0 | 36.8 | 33.4 |
| 03 06 | 016 | 39.6 | 44.0 | 47.2 | 45.5 | 39.9 | 34.9 |
| 03 07 | 000 | 43.8 | 46.5 | 49.9 | 48.2 | 41.2 | 37.2 |
| 03 07 | 005 | 42.8 | 46.4 | 49.2 | 46.7 | 40.8 | 36.0 |
| 03 07 | 010 | 49.8 | 52.5 | 55.5 | 53.2 | 46.1 | 40.4 |
| 03 07 | 020 | 47.8 | 51.6 | 54.7 | 52.8 | 45.6 | 40.2 |
| 03 08 | 000 | 46.0 | 50.0 | 52.5 | 50.1 | 43.5 | 39.2 |
| 03 08 | 005 | 46.9 | 50.9 | 53.1 | 51.1 | 44.5 | 39.5 |
| 03 08 | 010 | 49.5 | 52.1 | 55.8 | 53.4 | 46.4 | 40.4 |
| 03 08 | 015 | 51.2 | 53.7 | 58.2 | 54.7 | 47.3 | 41.8 |
| 03 08 | 025 | 51.8 | 56.2 | 59.3 | 56.6 | 49.2 | 44.1 |
| 04 01 | 000 | 29.3 | 32.2 | 35.8 | 33.9 | 29.9 | 26.4 |
| 04 01 | 005 | 27.2 | 29.5 | 31.6 | 30.5 | 26.5 | 22.8 |
| 04 01 | 010 | 40.5 | 43.5 | 46.6 | 42.6 | 36.9 | 33.3 |
| 04 01 | 015 | 23.8 | 26.6 | 30.1 | 29.7 | 27.0 | 23.7 |
| 04 02 | 000 | 4.9 | 5.4 | 6.7 | 8.2 | 7.5 | 6.4 |
| 04 02 | 004 | 6.2 | 6.3 | 8.4 | 8.4 | 7.8 | 6.3 |
| 04 02 | 007 | 26.3 | 29.5 | 32.9 | 31.3 | 27.8 | 24.7 |
| 04 03 | 000 | 27.5 | 29.9 | 32.7 | 31.2 | 27.4 | 24.4 |
| 04 03 | 005 | 29.9 | 32.5 | 35.3 | 33.5 | 28.7 | 25.1 |
| 04 03 | 010 | 32.2 | 35.4 | 36.9 | 35.2 | 30.2 | 26.2 |
| 04 03 | 015 | 6.2 | 6.0 | 8.0 | 9.0 | 9.7 | 9.1 |
| 04 04 | 000 | 11.3 | 13.5 | 15.2 | 17.2 | 14.2 | 11.5 |
| 04 04 | 007 | 13.1 | 14.6 | 15.9 | 14.3 | 13.6 | 13.1 |
| 04 04 | 008 | 26.1 | 29.6 | 30.6 | 28.8 | 25.0 | 21.4 |
| 04 04 | 013 | 18.9 | 21.4 | 25.7 | 25.0 | 22.8 | 21.2 |
| 04 05 | 000 | 16.4 | 18.7 | 20.6 | 19.8 | 17.1 | 14.6 |
| 04 05 | 005 | 14.5 | 15.6 | 16.8 | 16.6 | 14.6 | 12.6 |
| 04 05 | 008 | 10.8 | 10.5 | 12.6 | 13.2 | 9.4 | 8.6 |
| 04 06 | 000 | 13.0 | 14.1 | 17.1 | 16.2 | 14.2 | 12.6 |
| 04 06 | 005 | 21.1 | 23.2 | 25.3 | 25.2 | 22.6 | 18.5 |

NASA1 MAY 1977

| STATN | DPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 04 06 | 008 | 17.6 | 20.4 | 23.2 | 21.0 | 17.2 | 16.0 |
| 05 01 | 000 | 65.3 | 71.1 | 74.8 | 71.5 | 61.8 | 54.6 |
| 05 01 | 005 | 66.1 | 71.4 | 75.8 | 72.5 | 62.0 | 55.3 |
| 05 01 | 010 | 66.0 | 71.4 | 75.0 | 72.0 | 62.0 | 55.1 |
| 05 01 | 020 | 67.1 | 72.2 | 76.3 | 72.5 | 63.1 | 55.6 |
| 05 01 | 040 | 75.1 | 81.8 | 83.7 | 78.4 | 67.2 | 59.0 |
| 05 01 | 060 | 77.8 | 84.2 | 86.8 | 80.8 | 69.8 | 60.3 |
| 05 02 | 000 | 48.0 | 51.6 | 50.4 | 37.2 | 42.4 | 36.5 |
| 05 02 | 005 | 53.5 | 58.7 | 61.6 | 59.3 | 51.7 | 44.6 |
| 05 02 | 010 | 50.3 | 54.9 | 57.7 | 56.0 | 47.9 | 41.9 |
| 05 02 | 020 | 49.2 | 52.9 | 56.4 | 53.5 | 46.2 | 40.4 |
| 05 02 | 040 | 69.7 | 75.6 | 78.5 | 73.0 | 64.0 | 55.5 |
| 05 02 | 060 | 60.4 | 65.8 | 69.4 | 65.7 | 56.5 | 49.7 |
| 05 03 | 000 | 53.0 | 52.6 | 57.1 | 57.6 | 49.1 | 42.4 |
| 05 03 | 005 | 55.7 | 60.4 | 63.2 | 59.4 | 51.4 | 45.8 |
| 05 03 | 015 | 56.1 | 60.3 | 63.3 | 60.3 | 51.4 | 45.5 |
| 05 03 | 025 | 55.2 | 59.7 | 63.3 | 59.5 | 51.7 | 45.2 |
| 05 04 | 000 | 29.3 | 33.0 | 35.2 | 33.8 | 29.0 | 25.9 |
| 05 04 | 005 | 30.6 | 32.8 | 35.7 | 34.1 | 29.6 | 26.8 |
| 05 04 | 010 | 30.4 | 33.0 | 35.9 | 34.5 | 29.0 | 26.6 |
| 05 04 | 018 | 29.5 | 32.0 | 32.0 | 34.0 | 29.4 | 25.8 |
| 05 05 | 000 | 11.4 | 12.2 | 13.7 | 13.3 | 10.4 | 6.9 |
| 05 05 | 005 | 11.8 | 11.7 | 13.5 | 12.7 | 10.7 | 9.3 |
| 05 05 | 010 | 12.3 | 13.8 | 14.3 | 15.4 | 12.6 | 10.8 |
| 05 05 | 018 | 18.0 | 20.8 | 22.4 | 21.3 | 17.1 | 17.0 |
| 05 06 | 000 | 9.8 | 10.2 | 12.4 | 12.3 | 9.8 | 8.6 |
| 05 06 | 005 | 10.4 | 10.4 | 12.1 | 12.3 | 10.0 | 8.6 |
| 05 06 | 008 | 10.0 | 11.0 | 12.2 | 11.6 | 10.2 | 8.0 |
| 05 07 | 000 | 2.2 | 2.2 | 3.0 | 3.0 | 3.1 | 1.7 |
| 05 07 | 005 | 2.1 | 2.1 | 2.4 | 2.8 | 2.6 | 1.2 |
| 05 07 | 008 | 2.0 | 1.6 | 2.3 | 2.8 | 2.6 | 1.4 |
| 06 01 | 000 | 22.8 | 26.2 | 30.2 | 30.8 | 28.2 | 25.6 |
| 06 01 | 004 | 17.0 | 20.3 | 24.3 | 24.0 | 23.0 | 20.7 |
| 06 01 | 007 | 7.5 | 8.1 | 11.4 | 13.1 | 13.2 | 11.5 |
| 06 02 | 000 | 25.0 | 28.9 | 33.4 | 33.2 | 30.1 | 27.9 |
| 06 06 | 005 | 18.3 | 22.0 | 26.0 | 25.5 | 22.9 | 21.2 |
| 06 02 | 010 | 15.0 | 18.1 | 21.1 | 21.4 | 19.3 | 18.5 |
| 06 03 | 000 | 17.8 | 21.1 | 23.2 | 24.2 | 22.2 | 20.6 |
| 06 03 | 005 | 12.0 | 14.0 | 15.4 | 17.4 | 15.1 | 14.1 |
| 06 03 | 010 | 7.0 | 7.6 | 11.7 | 11.7 | 10.8 | 9.8 |
| 06 03 | 020 | 3.6 | 3.7 | 5.2 | 5.6 | 6.0 | 5.4 |
| 06 04 | 000 | 1.8 | 2.1 | 3.8 | 3.6 | 35.5 | 5.5 |
| 06 04 | 005 | 3.0 | 2.6 | 4.9 | .5 | 5.3 | 4.0 |
| 06 04 | 015 | 1.1 | .5 | 1.0 | 1.5 | 1.4 | .2 |
| 06 05 | 000 | 9.1 | 11.0 | 13.3 | 14.8 | 13.6 | 12.8 |
| 06 05 | 005 | 10.2 | 10.9 | 13.6 | 15.7 | 14.7 | 13.0 |
| 06 05 | 010 | 9.9 | 11.1 | 14.9 | 15.1 | 13.7 | 13.3 |
| 06 05 | 010 | 9.9 | 11.1 | 14.9 | 15.1 | 13.7 | 13.3 |
| 06 05 | 020 | 14.8 | 15.7 | 17.8 | 17.9 | 16.5 | 14.7 |
| 06 06 | 000 | 15.5 | 21.8 | 24.2 | 20.3 | 23.4 | 21.3 |

NASA1 MAY 1977

| STATN | DPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 06 06 | 005 | 14.9 | 17.4 | 21.1 | 21.3 | 20.2 | 18.9 |
| 06 06 | 010 | 15.8 | 18.0 | 21.7 | 22.6 | 20.4 | 19.4 |
| 06 06 | 020 | 11.4 | 13.4 | 16.0 | 17.8 | 16.0 | 15.7 |
| 06 06 | 030 | 26.9 | 31.1 | 34.8 | 34.1 | 29.1 | 27.3 |
| 06 07 | 000 | 32.9 | 38.0 | 41.0 | 38.8 | 33.1 | 29.7 |
| 06 07 | 005 | 33.6 | 37.6 | 40.3 | 38.1 | 34.3 | 30.5 |
| 06 07 | 010 | 33.4 | 37.9 | 40.6 | 38.3 | 33.3 | 30.9 |
| 06 07 | 020 | 33.4 | 37.8 | 41.2 | 38.9 | 34.0 | 30.4 |
| 06 07 | 040 | 34.2 | 40.2 | 43.4 | 42.7 | 37.4 | 34.8 |
| 06 07 | 050 | 40.0 | 45.6 | 49.2 | 48.2 | 41.6 | 37.5 |
| 06 08 | 000 | 33.0 | 56.9 | 38.7 | 37.1 | 31.5 | 28.3 |
| 06 08 | 005 | 32.5 | 36.5 | 37.9 | 36.5 | 31.7 | 28.5 |
| 06 08 | 010 | 36.2 | 40.5 | 43.9 | 43.0 | 36.0 | 32.6 |
| 06 08 | 020 | 40.2 | 46.2 | 49.3 | 47.4 | 42.7 | 38.2 |
| 06 08 | 040 | 62.0 | 69.4 | 72.4 | 69.3 | 59.8 | 52.6 |
| 06 08 | 055 | 40.6 | 44.6 | 48.6 | 46.4 | 40.0 | 35.2 |
| 06 09 | 000 | 51.0 | 54.6 | 56.6 | 53.3 | 46.3 | 40.9 |
| 06 09 | 010 | 47.5 | 52.0 | 52.7 | 51.2 | 43.7 | 38.4 |
| 06 09 | 020 | 56.0 | 60.9 | 63.5 | 60.0 | 52.3 | 46.2 |
| 06 09 | 040 | 79.9 | 85.4 | 88.0 | 82.2 | 69.9 | 61.1 |
| 06 09 | 060 | 83.4 | 89.7 | 93.1 | 86.4 | 74.2 | 64.1 |
| 06 10 | 000 | 56.9 | 61.0 | 64.2 | 60.8 | 52.3 | 46.1 |
| 06 10 | 005 | 55.7 | 60.7 | 64.1 | 60.8 | 51.3 | 46.1 |
| 06 10 | 010 | 48.0 | 58.8 | 61.4 | 57.8 | 51.3 | 40.4 |
| 06 10 | 020 | 58.3 | 63.0 | 66.0 | 62.8 | 54.7 | 47.5 |
| 06 10 | 040 | 75.5 | 80.8 | 84.1 | 77.5 | 66.0 | 58.0 |
| 06 10 | 060 | 79.5 | 85.9 | 88.9 | 83.2 | 71.1 | 61.3 |
| 06 11 | 000 | 76.5 | 81.0 | 81.2 | 76.8 | 66.3 | 57.5 |
| 06 11 | 005 | 76.5 | 80.0 | 82.0 | 77.3 | 65.7 | 57.7 |
| 06 11 | 010 | 71.2 | 75.5 | 78.4 | 72.6 | 61.7 | 55.6 |
| 06 11 | 020 | 60.8 | 66.2 | 69.6 | 66.3 | 57.2 | 50.4 |
| 06 11 | 040 | 67.4 | 72.5 | 75.2 | 70.9 | 60.8 | 53.3 |
| 06 11 | 060 | 76.5 | 82.7 | 85.9 | 79.9 | 68.5 | 60.0 |
| 07 01 | 000 | 45.5 | 51.4 | 55.2 | 53.8 | 46.2 | 41.7 |
| 07 01 | 005 | 45.2 | 51.3 | 55.3 | 52.8 | 46.2 | 40.8 |
| 07 01 | 010 | 44.1 | 50.1 | 53.4 | 50.9 | 44.7 | 39.6 |
| 07 01 | 020 | 53.5 | 60.8 | 64.6 | 61.3 | 53.2 | 46.6 |
| 07 01 | 040 | 69.0 | 76.0 | 79.3 | 74.1 | 63.8 | 55.3 |
| 07 01 | 060 | 70.4 | 77.3 | 80.5 | 74.8 | 64.3 | 55.9 |
| 09 01 | 000 | 55.5 | 60.6 | 66.3 | 63.6 | 56.2 | 50.7 |
| 09 01 | 005 | 47.2 | 53.6 | 56.0 | 54.4 | 48.3 | 44.3 |
| 09 01 | 010 | 47.5 | 51.8 | 55.6 | 52.9 | 47.3 | 42.3 |
| 09 01 | 020 | 52.2 | 58.1 | 62.0 | 60.1 | 52.3 | 46.7 |
| 09 01 | 040 | 63.0 | 69.1 | 72.4 | 68.4 | 59.7 | 52.4 |
| 09 01 | 060 | 50.6 | 55.7 | 60.8 | 57.8 | 51.3 | 45.4 |
| 09 01 | 090 | 28.6 | 32.1 | 35.8 | 34.9 | 31.1 | 28.0 |
| 09 02 | 000 | 45.5 | 49.4 | 53.1 | 52.2 | 46.4 | 40.9 |
| 09 02 | 005 | 46.0 | 49.6 | 53.4 | 51.8 | 44.9 | 39.6 |
| 09 02 | 010 | 47.8 | 49.1 | 51.8 | 53.0 | 46.4 | 40.6 |
| 09 02 | 020 | 43.6 | 47.4 | 50.3 | 48.5 | 41.6 | 36.9 |

NASA1 MAY 1977

| STATN | DPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 09 03 | 000 | 36.6 | 39.7 | 43.3 | 42.2 | 36.0 | 32.0 |
| 09 03 | 005 | 37.4 | 40.7 | 44.1 | 41.9 | 37.1 | 33.1 |
| 09 03 | 010 | 34.2 | 36.9 | 37.6 | 37.6 | 32.4 | 29.2 |
| 09 03 | 020 | 40.6 | 42.9 | 45.5 | 43.3 | 37.4 | 33.1 |
| 09 04 | 000 | 14.3 | 13.8 | 14.8 | 14.0 | 11.3 | 8.4 |
| 09 04 | 005 | 16.0 | 15.9 | 17.0 | 15.8 | 13.0 | 10.0 |
| 09 04 | 010 | 27.4 | 29.2 | 30.6 | 29.2 | 24.9 | 21.9 |
| 09 04 | 020 | 39.1 | 42.0 | 45.0 | 42.9 | 36.6 | 32.7 |
| 09 05 | 000 | 0 | .1 | .1 | .2 | 0 | 0 |
| 09 05 | 005 | 0 | .4 | 0 | 0 | 0 | 0 |
| 09 05 | 010 | 6.7 | 6.4 | 7.3 | 7.6 | 7.3 | 5.4 |
| 09 05 | 016 | 20.3 | 22.0 | 24.3 | 23.4 | 20.6 | 18.5 |
| 09 06 | 000 | .3 | 0 | 0 | 0 | 0 | 0 |
| 10 01 | 000 | 3.3 | 4.9 | 7.9 | 8.0 | 6.4 | 6.4 |
| 10 01 | 005 | 1.4 | 3.2 | 2.4 | 3.0 | 2.1 | .6 |
| 10 01 | 008 | 5.6 | 7.2 | 7.9 | 8.5 | 8.0 | 5.8 |
| 10 02 | 000 | .5 | .3 | 0 | 0 | .4 | 0 |
| 10 02 | 005 | 2.5 | 3.1 | 8.1 | 2.1 | 1.8 | .6 |
| 10 02 | 010 | 40.6 | 44.2 | 46.9 | 44.8 | 38.4 | 35.2 |
| 10 02 | 015 | 9.8 | 11.8 | 15.0 | 15.3 | 13.9 | 14.3 |
| 10 03 | 000 | .2 | 0 | 0 | 0 | .2 | 0 |
| 10 03 | 005 | 11.5 | 12.3 | 12.2 | 9.8 | 8.8 | 7.4 |
| 10 03 | 010 | 44.4 | 47.3 | 50.8 | 48.6 | 41.5 | 36.4 |
| 10 03 | 015 | 48.4 | 52.1 | 56.0 | 53.0 | 48.9 | 41.3 |
| 10 04 | 000 | 0 | 0 | 0 | .7 | 0 | .8 |
| 10 04 | 005 | 14.3 | 15.6 | 15.6 | 15.5 | 11.5 | 10.3 |
| 10 04 | 010 | 31.5 | 34.1 | 36.3 | 34.1 | 28.9 | 26.2 |
| 10 04 | 020 | 48.1 | 52.4 | 55.3 | 52.9 | 45.8 | 41.2 |
| 10 05 | 000 | 1.5 | .3 | .8 | 1.5 | 3.6 | 0 |
| 10 05 | 005 | 16.0 | 17.9 | 17.9 | 17.6 | 14.5 | 12.6 |
| 10 05 | 010 | 33.1 | 36.3 | 38.2 | 37.7 | 22.0 | 28.6 |
| 10 05 | 020 | 55.2 | 59.8 | 63.4 | 60.6 | 52.6 | 46.4 |
| 10 06 | 000 | 41.7 | 46.0 | 50.0 | 49.6 | 43.2 | 38.9 |
| 10 06 | 005 | 38.7 | 42.2 | 46.2 | 46.0 | 40.8 | 37.1 |
| 10 06 | 010 | 35.2 | 38.8 | 41.6 | 41.4 | 36.9 | 32.9 |
| 10 06 | 020 | 48.3 | 53.5 | 56.8 | 55.3 | 48.6 | 43.2 |
| 10 06 | 040 | 75.3 | 80.8 | 84.0 | 78.6 | 67.8 | 59.2 |
| 10 06 | 060 | 43.2 | 48.0 | 52.1 | 50.5 | 44.9 | 39.8 |
| 10 07 | 000 | 38.9 | 43.2 | 46.6 | 45.8 | 41.4 | 36.4 |
| 10 07 | 005 | 37.8 | 41.7 | 45.4 | 44.3 | 39.1 | 35.2 |
| 10 07 | 010 | 35.0 | 37.8 | 41.0 | 40.0 | 35.2 | 32.7 |
| 10 07 | 020 | 47.3 | 51.8 | 55.3 | 53.5 | 47.3 | 42.4 |
| 10 07 | 040 | 64.6 | 71.3 | 75.4 | 71.3 | 60.7 | 53.9 |
| 10 07 | 060 | 40.0 | 44.2 | 48.4 | 46.4 | 40.5 | 36.9 |
| 10 08 | 000 | 13.2 | 13.5 | 13.2 | 13.9 | 9.6 | 8.9 |
| 10 08 | 005 | 20.0 | 20.6 | 21.2 | 19.3 | 16.7 | 14.0 |
| 10 08 | 010 | 37.9 | 40.8 | 43.9 | 42.7 | 37.6 | 33.5 |
| 10 08 | 020 | 50.1 | 54.9 | 58.0 | 55.2 | 48.2 | 42.0 |
| 10 08 | 040 | 34.8 | 38.5 | 42.7 | 41.8 | 37.1 | 33.0 |
| 10 09 | 000 | 11.9 | 10.9 | 12.1 | 11.0 | 8.8 | 9.8 |

NASA1 MAY 1977

| STATN | OPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 10 09 | 005 | 12.2 | 11.6 | 12.8 | 11.7 | 9.7 | 6.9 |
| 10 09 | 010 | 23.6 | 22.6 | 26.5 | 24.9 | 21.9 | 19.2 |
| 10 09 | 020 | 34.8 | 38.3 | 39.7 | 38.7 | 32.6 | 29.8 |
| 10 10 | 000 | 1.5 | .9 | .8 | 1.2 | .7 | 0 |
| 10 10 | 005 | 2.2 | 1.5 | 1.5 | 1.5 | 1.4 | 0 |
| 10 10 | 010 | 23.9 | 25.6 | 26.7 | 24.4 | 21.0 | 19.4 |
| 10 10 | 020 | 45.2 | 47.6 | 51.3 | 48.3 | 43.4 | 38.8 |
| 11 01 | 000 | 13.9 | 16.2 | 20.0 | 19.4 | 18.4 | 17.2 |
| 11 01 | 005 | 20.8 | 23.7 | 27.5 | 27.0 | 23.6 | 22.1 |
| 11 01 | 010 | 30.3 | 33.7 | 36.9 | 35.4 | 32.0 | 28.4 |
| 11 01 | 015 | 33.2 | 38.2 | 42.0 | 41.0 | 36.2 | 32.8 |
| 11 02 | 000 | 30.3 | 33.3 | 36.0 | 36.1 | 31.0 | 28.5 |
| 11 02 | 005 | 31.9 | 35.4 | 38.6 | 36.7 | 33.2 | 30.2 |
| 11 02 | 010 | 31.9 | 35.6 | 39.4 | 38.0 | 34.5 | 31.5 |
| 11 02 | 020 | 36.7 | 42.2 | 45.3 | 44.3 | 39.4 | 36.2 |
| 11 02 | 040 | 23.5 | 25.8 | 29.3 | 29.2 | 25.7 | 22.6 |
| 11 03 | 000 | 29.6 | 32.8 | 34.4 | 32.2 | 27.6 | 25.9 |
| 11 03 | 005 | 29.6 | 33.4 | 34.9 | 33.6 | 28.6 | 26.9 |
| 11 03 | 010 | 27.9 | 30.2 | 32.5 | 31.8 | 27.6 | 25.8 |
| 11 03 | 020 | 38.9 | 43.7 | 47.5 | 45.8 | 40.4 | 36.2 |
| 11 03 | 040 | 56.3 | 62.9 | 66.1 | 63.3 | 55.7 | 49.2 |
| 11 03 | 060 | 60.8 | 66.8 | 70.4 | 67.7 | 58.5 | 52.3 |
| 11 04 | 000 | 23.5 | 27.2 | 27.2 | 25.7 | 23.4 | 21.8 |
| 11 04 | 005 | 22.3 | 23.7 | 26.5 | 24.7 | 21.9 | 20.0 |
| 11 04 | 010 | 27.6 | 32.0 | 34.4 | 32.6 | 29.3 | 26.9 |
| 11 04 | 020 | 52.2 | 58.8 | 61.9 | 58.7 | 52.4 | 45.5 |
| 11 04 | 040 | 60.5 | 67.6 | 72.8 | 69.3 | 60.9 | 54.2 |
| 11 04 | 060 | 49.1 | 55.1 | 59.0 | 58.2 | 48.6 | 43.3 |
| 11 05 | 000 | 61.2 | 65.7 | 67.9 | 64.4 | 55.7 | 49.4 |
| 11 05 | 005 | 61.6 | 65.0 | 67.5 | 64.3 | 55.0 | 48.5 |
| 11 05 | 010 | 61.4 | 66.8 | 67.8 | 64.4 | 56.1 | 49.5 |
| 11 05 | 020 | 66.6 | 71.1 | 73.9 | 69.7 | 61.0 | 53.7 |
| 11 05 | 040 | 63.6 | 68.7 | 71.9 | 67.8 | 58.6 | 51.7 |
| 11 05 | 060 | 71.7 | 75.5 | 78.2 | 73.0 | 63.2 | 55.0 |
| 11 06 | 000 | 88.6 | 92.9 | 95.1 | 88.0 | 75.0 | 64.7 |
| 11 06 | 000 | 88.6 | 92.9 | 95.1 | 88.0 | 75.0 | 64.7 |
| 11 06 | 005 | 88.5 | 92.2 | 94.6 | 87.9 | 74.8 | 65.0 |
| 11 06 | 010 | 88.4 | 91.6 | 95.1 | 87.8 | 73.7 | 64.2 |
| 11 06 | 020 | 88.6 | 95.6 | 94.8 | 89.0 | 75.8 | 65.3 |
| 11 06 | 040 | 82.4 | 87.6 | 89.8 | 82.9 | 70.3 | 61.1 |
| 11 06 | 060 | 83.4 | 88.5 | 91.5 | 84.1 | 71.5 | 62.5 |
| 11 06 | 080 | 83.1 | 88.6 | 91.0 | 85.2 | 72.5 | 63.1 |
| 11 06 | 090 | 82.7 | 88.0 | 87.2 | 84.9 | 71.8 | 62.1 |
| 12 01 | 000 | 52.7 | 59.0 | 63.2 | 62.6 | 55.6 | 50.0 |
| 12 01 | 010 | 51.4 | 54.3 | 61.2 | 59.8 | 53.4 | 48.1 |
| 12 01 | 020 | 47.6 | 53.3 | 57.0 | 55.3 | 49.0 | 41.6 |
| 12 01 | 040 | 70.4 | 76.9 | 80.4 | 75.0 | 65.2 | 56.7 |
| 12 01 | 060 | 72.1 | 78.2 | 81.2 | 76.8 | 66.1 | 57.5 |
| 12 02 | 000 | 9.8 | 11.0 | 11.9 | 11.8 | 9.2 | 7.8 |
| 12 02 | 005 | 21.4 | 23.0 | 25.2 | 24.3 | 19.8 | 17.5 |

NASA1 MAY 1977

| STATN | DPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 12 02 | 010 | 42.8 | 47.8 | 51.8 | 51.4 | 45.2 | 40.8 |
| 12 02 | 020 | 54.2 | 59.7 | 63.3 | 61.2 | 53.4 | 47.5 |
| 12 02 | 040 | 59.4 | 64.7 | 68.5 | 65.3 | 56.1 | 50.7 |
| 12 02 | 060 | 38.8 | 43.2 | 48.0 | 45.8 | 40.0 | 36.2 |
| 12 03 | 000 | 8.2 | 7.7 | 9.8 | 10.1 | 8.1 | 6.5 |
| 12 03 | 005 | .7 | .4 | .6 | .5 | .8 | .3 |
| 12 03 | 010 | .3 | .1 | .1 | .1 | .1 | .6 |
| 12 03 | 020 | 50.9 | 56.6 | 60.4 | 57.3 | 50.4 | 44.6 |
| 12 03 | 040 | 57.2 | 62.9 | 67.1 | 63.4 | 55.7 | 48.5 |
| 12 03 | 060 | 56.5 | 62.1 | 65.6 | 62.8 | 54.9 | 48.6 |
| 12 04 | 000 | .8 | .2 | .6 | .3 | .2 | .3 |
| 12 04 | 005 | 0 | 0 | 0 | 0 | .1 | 0 |
| 12 04 | 010 | 2.2 | 2.0 | 1.9 | 1.7 | 2.1 | 1.0 |
| 12 04 | 020 | 17.8 | 19.5 | 21.3 | 21.7 | 17.9 | 14.6 |
| 12 04 | 040 | 20.8 | 23.4 | 26.0 | 24.7 | 22.1 | 20.2 |
| 12 05 | 000 | 1.6 | 1.2 | 1.5 | 1.2 | 1.2 | 0 |
| 12 05 | 005 | 2.0 | 1.4 | 1.2 | 1.6 | 1.2 | 0 |
| 12 05 | 010 | .1 | .1 | .1 | 0 | 0 | 0 |
| 12 05 | 020 | 1.0 | .5 | .6 | .4 | .8 | .1 |
| 12 06 | 000 | 16.0 | 19.2 | 20.4 | 18.8 | 16.1 | 13.0 |
| 12 06 | 005 | 16.3 | 18.1 | 19.5 | 18.7 | 16.4 | 13.7 |
| 12 06 | 010 | 10.2 | 9.7 | 12.6 | 12.5 | 9.4 | 8.1 |
| 12 06 | 020 | 1.6 | 1.1 | 1.5 | 1.7 | 2.1 | .9 |
| 12 07 | 000 | 23.8 | 27.1 | 30.4 | 29.5 | 25.4 | 22.2 |
| 12 07 | 005 | 23.4 | 27.3 | 30.2 | 28.3 | 24.9 | 22.6 |
| 12 07 | 010 | 5.9 | 7.8 | 5.7 | 6.6 | 6.3 | 4.3 |
| 12 07 | 015 | 6.0 | 6.6 | 8.0 | 8.8 | 6.7 | 5.4 |
| 12 08 | 000 | 15.5 | 17.8 | 19.9 | 19.6 | 15.8 | 13.6 |
| 12 08 | 005 | 16.0 | 17.8 | 20.1 | 19.2 | 16.5 | 13.6 |
| 12 08 | 010 | 10.2 | 12.4 | 13.5 | 12.9 | 12.1 | 9.4 |
| 12 09 | 000 | 13.8 | 15.9 | 17.2 | 17.3 | 14.2 | 11.6 |
| 12 09 | 005 | 13.8 | 14.9 | 17.5 | 17.1 | 14.1 | 11.7 |
| 12 09 | 010 | 2.7 | 2.9 | 3.1 | 2.9 | 2.9 | 2.1 |
| 12 10 | 000 | 23.7 | 27.0 | 30.8 | 30.3 | 25.3 | 22.2 |
| 12 10 | 005 | 15.6 | 18.2 | 20.8 | 21.6 | 16.3 | 14.2 |
| 12 10 | 010 | 1.5 | 1.3 | 2.1 | 2.4 | 2.2 | .7 |
| 12 11 | 000 | 5.1 | 4.8 | 6.4 | 6.8 | 5.3 | 2.7 |
| 12 11 | 005 | 4.8 | 4.8 | 5.9 | 5.5 | 5.0 | 2.8 |
| 12 11 | 010 | .4 | .3 | .5 | .4 | .3 | 0 |
| 12 11 | 014 | 2.4 | 2.2 | 3.0 | 2.6 | 2.9 | 2.1 |
| 13 01 | 000 | .7 | .2 | .4 | .8 | .3 | .1 |
| 13 01 | 005 | 2.4 | 2.1 | 2.5 | 2.5 | 2.6 | 1.0 |
| 13 01 | 010 | 7.5 | 7.1 | 7.8 | 8.2 | 6.7 | 5.3 |
| 13 01 | 020 | 29.1 | 32.4 | 34.8 | 33.1 | 29.4 | 26.4 |
| 13 01 | 025 | 32.9 | 36.9 | 41.0 | 40.0 | 35.1 | 32.4 |
| 13 02 | 000 | .2 | .3 | 0 | .1 | .2 | .1 |
| 13 02 | 005 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 02 | 010 | 1.4 | .7 | .6 | 1.3 | 1.2 | .3 |
| 13 02 | 020 | 17.3 | 18.8 | 19.7 | 18.1 | 15.9 | 14.7 |
| 13 03 | 000 | 51.4 | 58.3 | 62.7 | 61.4 | 54.0 | 48.4 |

NASA1 MAY 1977

| STATN | OPH | TR400 | TR450 | TR500 | TR550 | TR600 | TR650 |
|---|---|---|---|---|---|---|---|
| 13 03 | 005 | 52.0 | 59.6 | 64.8 | 62.6 | 54.7 | 48.4 |
| 13 03 | 010 | 51.6 | 58.9 | 64.1 | 62.5 | 54.4 | 48.4 |
| 13 03 | 020 | 43.5 | 50.0 | 54.8 | 53.8 | 46.1 | 41.4 |
| 13 03 | 040 | 57.3 | 63.5 | 65.8 | 63.9 | 53.9 | 47.4 |
| 10 03 | 060 | 39.6 | 45.0 | 49.0 | 46.3 | 40.9 | 34.6 |
| 13 04 | 000 | 43.3 | 47.2 | 50.3 | 49.8 | 43.0 | 38.3 |
| 13 04 | 005 | 42.5 | 46.8 | 50.6 | 48.2 | 42.1 | 36.9 |
| 13 04 | 010 | 44.1 | 48.5 | 51.5 | 50.0 | 43.6 | 38.3 |
| 13 04 | 020 | 56.8 | 62.1 | 65.5 | 62.4 | 54.0 | 47.2 |

NASA 2 Station 06-01 9/6/77 0900

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.52 | 33.70 | 25.31 | 26.8 | 30.8 | 33.8 | 32.3 | 28.0 | 24.5 |
| 5 | 12.59 | 33.63 | 25.43 | 20.4 | 22.1 | 23.3 | 24.8 | 19.8 | 16.9 |
| 10 | 11.92 | 33.73 | 25.64 | 30.5 | 33.8 | 37.2 | 35.5 | 31.5 | 29.3 |
| 15 | 11.91 | 33.73 | 25.64 | 42.9 | 49.8 | 53.4 | 51.6 | 43.9 | 39.5 |
| 20 | 11.39 | 33.74 | 25.74 | 60.1 | 65.3 | 71.4 | 66.1 | 56.5 | 49.9 |
| 25 | 11.22 | 33.72 | 25.77 | 64.4 | 74.2 | 74.4 | 74.2 | 62.1 | 53.7 |
| 30 | 11.02 | 33.72 | 25.80 | 69.2 | 76.3 | 80.9 | 76.0 | 64.7 | 56.7 |
| 35 | 10.80 | 33.78 | 25.86 | 69.2 | 76.6 | 80.9 | 70.6 | 64.7 | 56.5 |
| 40 | 10.70 | 33.78 | 25.90 | 68.6 | 77.1 | 79.1 | 75.0 | 64.6 | 55.9 |
| 45 | 10.57 | 33.78 | 25.93 | 67.2 | 74.5 | 78.4 | 73.6 | 62.5 | 54.9 |

NASA 2 Station 06-02 9/6/77 1215

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.82 | 33.74 | 25.27 | 40.7 | 45.8 | 51.3 | 47.0 | 39.0 | 34.0 |
| 5 | 13.17 | 33.52 | 25.23 | 45.0 | 49.8 | 52.1 | 48.3 | 43.7 | 35.4 |
| 10 | 11.69 | 33.73 | 25.69 | 61.1 | 67.6 | 71.7 | 67.6 | 59.4 | 53.1 |
| 15 | 11.38 | 33.76 | 25.76 | 68.8 | 75.5 | 80.2 | 73.7 | 63.8 | 55.3 |
| 20 | 11.34 | 33.78 | 25.78 | 70.8 | 79.4 | 83.0 | 78.0 | 66.2 | 57.0 |
| 25 | 11.35 | 33.78 | 25.78 | 71.2 | 78.0 | 81.7 | 76.9 | 65.6 | 57.2 |
| 30 | 11.35 | 33.78 | 25.78 | 71.1 | 80.2 | 81.5 | 76.8 | 65.4 | 55.9 |
| 35 | 11.33 | 33.79 | 25.79 | 70.9 | 78.8 | 83.3 | 78.4 | 66.4 | 57.5 |
| 40 | 11.19 | 33.80 | 25.83 | 73.6 | 79.3 | 83.3 | 78.3 | 67.0 | 57.8 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 11.19 | 33.79 | 25.82 | 73.7 | 81.9 | 85.0 | 79.1 | 67.7 | 57.2 |
| 50 | 11.18 | 33.78 | 25.81 | 73.3 | 80.1 | 85.1 | 79.8 | 66.1 | 58.2 |
| 55 | 11.08 | 33.79 | 25.84 | 73.6 | 81.3 | 83.4 | 79.8 | 67.5 | 59.9 |
| 60 | 11.00 | 33.81 | 25.87 | 72.3 | 79.9 | 83.7 | 78.1 | 66.1 | 57.7 |
| 65 | 10.89 | 33.81 | 25.89 | 72.6 | 80.1 | 84.4 | 78.0 | 65.1 | 58.1 |
| 70 | 10.83 | 33.81 | 25.90 | 71.9 | 80.2 | 84.8 | 79.3 | 67.1 | 58.0 |
| NASA 2 | Station 06-03 | 9/6/77 | 1330 | | | | | | |
| 1 | 13.52 | 33.76 | 25.35 | 48.2 | 54.7 | 58.6 | 55.7 | 46.3 | 41.2 |
| 5 | 12.93 | 33.68 | 25.38 | 47.8 | 52.9 | 58.2 | 53.0 | 44.9 | 39.1 |
| 10 | 11.68 | 33.76 | 25.71 | 67.4 | 75.2 | 78.6 | 73.4 | 61.9 | 53.6 |
| 15 | 11.61 | 33.77 | 25.73 | 65.5 | 72.2 | 77.2 | 70.9 | 60.3 | 53.8 |
| 20 | 11.57 | 33.76 | 25.73 | 62.3 | 68.6 | 75.9 | 71.1 | 59.9 | 51.8 |
| 25 | 11.52 | 33.78 | 25.73 | 66.4 | 72.4 | 77.2 | 71.4 | 58.8 | 53.1 |
| 30 | 11.42 | 33.78 | 25.77 | 67.7 | 76.4 | 79.3 | 74.4 | 63.3 | 54.9 |
| NASA 2 | Station 06-04 | 9/6/77 | 1435 | | | | | | |
| 1 | 13.56 | 33.70 | 25.29 | 65.3 | 73.3 | 76.1 | 73.6 | 61.8 | 54.0 |
| 5 | 13.42 | 33.66 | 25.29 | 64.6 | 70.1 | 74.8 | 68.7 | 59.2 | 53.5 |
| 10 | 12.57 | 33.72 | 25.51 | 59.1 | 67.9 | 70.7 | 67.6 | 60.1 | 52.9 |
| 15 | 12.28 | 33.70 | 25.54 | 54.9 | 53.6 | 62.2 | 64.8 | 52.6 | 51.4 |
| 20 | 12.04 | 33.67 | 25.57 | 66.6 | 65.0 | 77.5 | 50.3 | 63.9 | 55.2 |
| 25 | 11.68 | 33.74 | 25.69 | 62.0 | 69.1 | 73.8 | 66.9 | 59.1 | 50.5 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 11.64 | 33.75 | 25.71 | 63.5 | 69.2 | 74.2 | 66.5 | 59.4 | 52.1 |
| 35 | 11.41 | 33.74 | 25.75 | 68.1 | 74.1 | 80.5 | 74.3 | 63.6 | 54.7 |
| 40 | 11.36 | 33.75 | 25.76 | 72.2 | 79.4 | 82.0 | 76.6 | 65.8 | 57.5 |
| 45 | 11.26 | 33.77 | 25.79 | 70.8 | 75.8 | 82.0 | 76.3 | 65.5 | 57.3 |
| 50 | 11.23 | 33.76 | 25.79 | 73.7 | 81.9 | 85.0 | 78.4 | 66.9 | 58.0 |
| 55 | 11.14 | 33.76 | 25.83 | 73.3 | 79.4 | 83.3 | 76.7 | 67.1 | 57.9 |
| 60 | 10.93 | 33.78 | 25.86 | 73.4 | 79.3 | 83.4 | 79.6 | 66.1 | 58.4 |
| 65 | 10.86 | 33.77 | 25.87 | 73.7 | 81.6 | 83.7 | 78.3 | 67.5 | 58.1 |
| 70 | 10.76 | 33.78 | 25.89 | 72.7 | 79.5 | 83.7 | 77.6 | 66.6 | 52.7 |
| 75 | 10.72 | 33.80 | 25.91 | 71.2 | 80.1 | 82.2 | 78.0 | 65.9 | 58.1 |
| 80 | 10.57 | 33.77 | 25.92 | 67.8 | 76.9 | 78.9 | 74.2 | 63.6 | 55.0 |
| 85 | 10.27 | 33.81 | 26.00 | 69.3 | 76.6 | 78.5 | 75.8 | 63.6 | 55.4 |
| 90 | 10.04 | 33.86 | 26.08 | 63.1 | 66.9 | 72.3 | 69.0 | 58.9 | 50.2 |

NASA 2 Station 06-05 9/6/77 1530

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.48 | 33.56 | 25.33 | 23.1 | 29.5 | 38.0 | 32.0 | 7.0 | 29.0 |
| 5 | 12.79 | 33.67 | 25.42 | 36.7 | 40.1 | 45.2 | 46.8 | 34.5 | 32.5 |
| 10 | 12.65 | 33.67 | 25.44 | 38.5 | 42.7 | 49.0 | 48.8 | 40.8 | 36.0 |
| 15 | 12.49 | 33.65 | 25.47 | 44.5 | 52.4 | 57.8 | 55.3 | 48.8 | 42.7 |
| 20 | 12.20 | 33.67 | 25.54 | 45.3 | 53.1 | 56.2 | 53.1 | 47.3 | 40.6 |
| 25 | 12.01 | 33.68 | 25.59 | 50.2 | 62.7 | 64.7 | 64.3 | 55.9 | 48.9 |
| 30 | 11.93 | 33.66 | 25.58 | 60.3 | 67.2 | 69.4 | 51.1 | 59.8 | 51.7 |
| 35 | 11.37 | 33.68 | 25.69 | 70.2 | 82.5 | 78.5 | 79.8 | 66.1 | 56.7 |
| 40 | 11.33 | 33.77 | 25.74 | 76.1 | 84.1 | 89.2 | 82.4 | 70.0 | 61.1 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 11.21 | 33.70 | 25.75 | 79.9 | 87.3 | 91.9 | 85.7 | 72.9 | 62.9 |
| 50 | 10.86 | 33.71 | 25.82 | 81.5 | 88.9 | 93.5 | 86.0 | 72.4 | 63.8 |
| 55 | 10.47 | 33.72 | 25.89 | 83.7 | 91.0 | 94.5 | 88.2 | 74.1 | 63.6 |
| 60 | 10.43 | 33.72 | 25.91 | 85.1 | 91.7 | 94.6 | 88.5 | 74.2 | 69.8 |
| 65 | 10.27 | 33.75 | 25.95 | 85.1 | 91.9 | 95.3 | 88.6 | 74.8 | 64.2 |
| 70 | 10.16 | 33.75 | 25.98 | 86.3 | 93.1 | 96.3 | 88.4 | 75.3 | 64.4 |
| 75 | 9.90 | 33.78 | 26.04 | 84.7 | 91.8 | 94.7 | 87.8 | 74.0 | 63.9 |
| 80 | 9.70 | 33.77 | 26.06 | 85.0 | 91.0 | 95.3 | 87.6 | 74.1 | 64.0 |
| 85 | 9.66 | 33.78 | 26.08 | 85.4 | 91.7 | 94.1 | 87.8 | 73.8 | 63.8 |
| 90 | 9.59 | 33.85 | 26.14 | 84.9 | 91.7 | 94.5 | 87.6 | 73.8 | 63.6 |
| NASA 2 | Station 07-01 | 9/7/77 | 0830 | | | | | | |
| 1 | 15.27 | 33.69 | 24.41 | 29.6 | 36.0 | 40.4 | 39.6 | 34.1 | 32.1 |
| 5 | 15.04 | 33.69 | 24.98 | 33.6 | 39.1 | 43.3 | 42.8 | 37.5 | 34.0 |
| 9 | 14.30 | 33.68 | 25.13 | 35.4 | 41.0 | 44.7 | 44.8 | 37.2 | 34.2 |
| NASA 2 | Station 07-02 | 9/7/77 | 0900 | | | | | | |
| 1 | 14.15 | 33.71 | 25.18 | 38.4 | 45.4 | 50.0 | 46.1 | 38.9 | 33.4 |
| 5 | 13.93 | 33.79 | 25.21 | 38.9 | 45.2 | 51.8 | 48.3 | 40.6 | 37.1 |
| 10 | 13.12 | 33.68 | 25.35 | 33.6 | 41.0 | 42.5 | 41.5 | 36.5 | 31.7 |
| 15 | 12.75 | 33.73 | 25.48 | 11.3 | 19.1 | 15.0 | 14.5 | 14.7 | 11.9 |

NASA 2 Station 08-01 9/8/77 0820

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.59 | 33.72 | 25.09 | 48.7 | 57.2 | 59.3 | 56.6 | 48.7 | 43.4 |
| 5 | 14.58 | 33.73 | 25.11 | 54.4 | 61.4 | 66.0 | 61.6 | 53.8 | 47.8 |
| 10 | 12.50 | 33.71 | 25.51 | 18.3 | 21.0 | 24.4 | 25.7 | 21.2 | 20.8 |
| 15 | 11.81 | 33.71 | 25.64 | 31.7 | 36.7 | 41.7 | 39.7 | 35.1 | 31.0 |
| 20 | 11.61 | 33.72 | 25.69 | 61.4 | 69.4 | 71.3 | 69.9 | 58.4 | 50.0 |
| 25 | 11.56 | 33.72 | 25.70 | 62.0 | 52.6 | 73.8 | 62.9 | 57.8 | 49.7 |

NASA 2 Station 08-02 9/8/77 0912

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.24 | 33.70 | 25.15 | 44.5 | 52.6 | 54.6 | 53.8 | 48.7 | 39.8 |
| 5 | 14.23 | 33.72 | 25.17 | 47.1 | 53.5 | 58.6 | 61.4 | 51.7 | 40.6 |
| 10 | 13.68 | 33.65 | 25.20 | 46.8 | 55.8 | 59.7 | 55.7 | 46.6 | 44.1 |
| 15 | 11.91 | 33.66 | 25.59 | 43.6 | 51.3 | 52.2 | 48.7 | 46.0 | 38.0 |
| 20 | 11.59 | 33.70 | 25.68 | 49.3 | 58.3 | 61.5 | 58.5 | 50.0 | 44.7 |
| 25 | 11.41 | 33.72 | 25.73 | 66.4 | 75.4 | 77.0 | 73.6 | 62.2 | 54.3 |

NASA 2 Station 08-03 9/8/77 1010

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.05 | 33.65 | 25.17 | 62.1 | 69.8 | 73.0 | 71.8 | 60.9 | 53.6 |
| 5 | 13.87 | 33.62 | 25.17 | 59.5 | 67.3 | 69.2 | 67.2 | 54.3 | 50.5 |
| 10 | 12.49 | 33.64 | 25.47 | 45.0 | 53.6 | 52.1 | 49.5 | 44.9 | 39.5 |
| 15 | 11.56 | 33.67 | 25.66 | 76.6 | 86.1 | 80.9 | 82.8 | 69.0 | 60.7 |
| 20 | 11.41 | 33.62 | 25.65 | 77.9 | 86.4 | 88.9 | 82.7 | 69.9 | 61.8 |
| 25 | 11.29 | 33.68 | 25.72 | 77.5 | 86.0 | 89.5 | 82.4 | 70.3 | 62.3 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 11.27 | 33.70 | 25.74 | 76.9 | 85.2 | 88.5 | 82.1 | 70.0 | 59.4 |
| 35 | 11.10 | 33.70 | 25.77 | 72.1 | 85.2 | 86.5 | 81.5 | 67.9 | 61.8 |
| 40 | 10.98 | 33.71 | 25.80 | 77.4 | 85.1 | 89.0 | 82.2 | 69.3 | 61.1 |
| 45 | 10.89 | 33.71 | 25.81 | 77.0 | 84.5 | 88.2 | 82.7 | 69.7 | 60.7 |
| 50 | 10.82 | 33.72 | 25.84 | 73.8 | 81.6 | 85.2 | 79.8 | 67.7 | 59.1 |
| 55 | 10.75 | 33.73 | 25.86 | 71.9 | 79.2 | 82.8 | 78.3 | 66.6 | 58.1 |
| 60 | 10.65 | 33.75 | 25.89 | 51.1 | 57.5 | 61.4 | 58.8 | 50.8 | 45.7 |
| 65 | 10.64 | 33.74 | 25.89 | 49.3 | 54.5 | 59.0 | 57.2 | 50.5 | 44.4 |

NASA 2 Station 08-04 9/8/77 1140

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.79 | 33.61 | 25.22 | 54.1 | 52.9 | 62.0 | 62.3 | 54.8 | 48.1 |
| 5 | 13.64 | 33.70 | 25.28 | 54.8 | 61.3 | 70.2 | 58.3 | 59.2 | 60.8 |
| 10 | 12.88 | 33.69 | 25.42 | 51.3 | 67.5 | 71.6 | 64.5 | 59.0 | 51.6 |
| 15 | 12.56 | 33.69 | 25.49 | 57.1 | 69.1 | 73.7 | 64.7 | 59.4 | 54.4 |
| 20 | 12.30 | 33.73 | 25.56 | 61.5 | 70.7 | 75.6 | 69.1 | 59.8 | 53.6 |
| 25 | 11.90 | 33.65 | 25.58 | 20.2 | 76.1 | 81.8 | 77.7 | 65.4 | 57.3 |
| 30 | 11.59 | 33.62 | 25.61 | 70.6 | 79.7 | 81.3 | 77.3 | 68.8 | 57.6 |
| 35 | 11.31 | 33.64 | 25.68 | 80.6 | 82.0 | 91.7 | 85.8 | 71.3 | 62.4 |
| 40 | 11.09 | 33.65 | 25.73 | 82.0 | 90.0 | 93.3 | 86.6 | 73.2 | 63.5 |
| 45 | 10.91 | 33.65 | 25.76 | 83.0 | 87.4 | 99.0 | 86.2 | 72.7 | 62.7 |
| 50 | 10.56 | 33.68 | 25.84 | 83.6 | 92.0 | 94.3 | 88.4 | 74.7 | 63.7 |
| 55 | 10.48 | 33.70 | 25.88 | 81.1 | 88.0 | 92.1 | 86.3 | 72.4 | 61.8 |
| 60 | 10.45 | 33.71 | 25.89 | 74.6 | 82.9 | 86.1 | 80.9 | 68.9 | 59.4 |
| 65 | 10.43 | 33.74 | 25.91 | 68.2 | 74.9 | 78.5 | 74.1 | 64.0 | 56.0 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 70 | 10.38 | 33.76 | 25.93 | 66.6 | 74.1 | 77.7 | 72.8 | 63.1 | 54.9 |
| 75 | 10.26 | 33.77 | 25.97 | 66.3 | 73.9 | 76.9 | 72.9 | 62.4 | 54.4 |

NASA 2 Station 08-05 9/8/77 1300

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.52 | 33.69 | 25.29 | 60.6 | 69.4 | 73.7 | 69.3 | 59.4 | 50.6 |
| 5 | 13.18 | 33.70 | 25.37 | 57.0 | 63.6 | 69.4 | 67.2 | 58.2 | 51.2 |
| 10 | 12.87 | 33.66 | 25.40 | 62.9 | 69.7 | 75.7 | 71.7 | 63.3 | 54.4 |
| 15 | 12.74 | 33.69 | 25.46 | 64.5 | 60.8 | 76.7 | 72.9 | 61.8 | 55.9 |
| 20 | 12.46 | 33.67 | 25.49 | 66.4 | 74.7 | 79.9 | 74.4 | 63.4 | 56.5 |
| 25 | 12.23 | 33.62 | 25.49 | 69.9 | 77.9 | 83.3 | 77.1 | 66.9 | 56.4 |
| 30 | 11.43 | 33.70 | 25.70 | 76.6 | 83.3 | 88.7 | 84.1 | 70.8 | 61.5 |
| 35 | 11.39 | 33.69 | 25.70 | 77.8 | 84.9 | 88.4 | 81.8 | 69.7 | 62.4 |
| 40 | 11.37 | 33.70 | 25.72 | 76.4 | 83.8 | 88.1 | 82.7 | 70.2 | 61.0 |
| 45 | 11.31 | 33.70 | 25.73 | 76.0 | 84.4 | 88.5 | 82.7 | 70.9 | 60.7 |
| 50 | 11.21 | 33.67 | 25.72 | 76.8 | 85.4 | 85.7 | 82.4 | 69.0 | 61.5 |
| 55 | 11.07 | 33.74 | 25.81 | 77.5 | 85.9 | 90.3 | 82.9 | 70.8 | 61.3 |
| 60 | 10.72 | 33.67 | 25.80 | 83.5 | 88.8 | 93.7 | 87.2 | 73.5 | 63.8 |
| 65 | 10.50 | 33.63 | 25.81 | 84.4 | 92.0 | 96.1 | 88.5 | 75.3 | 64.6 |
| 70 | 10.23 | 33.67 | 25.89 | 84.5 | 90.4 | 94.5 | 87.9 | 74.4 | 63.8 |
| 75 | 10.22 | 33.71 | 25.93 | 83.3 | 90.7 | 94.1 | 84.9 | 73.9 | 63.1 |
| 80 | 10.14 | 33.69 | 25.91 | 82.8 | 89.4 | 93.7 | 86.7 | 73.9 | 63.7 |
| 85 | 10.05 | 33.72 | 25.96 | 84.7 | 90.9 | 94.2 | 88.4 | 74.5 | 63.7 |
| 90 | 9.99 | 33.69 | 25.95 | 85.3 | 92.3 | 94.0 | 88.2 | 75.1 | 64.5 |

NASA 2 Station 08-06 9/8/77 1400

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.39 | 33.64 | 25.31 | 47.2 | 57.5 | 52.6 | 55.4 | 50.6 | 40.1 |
| 5 | 12.80 | 33.65 | 25.41 | 58.5 | 66.8 | 71.1 | 66.7 | 58.6 | 46.9 |
| 10 | 12.49 | 33.60 | 25.43 | 58.3 | 67.2 | 73.2 | 66.1 | 57.4 | 49.7 |
| 15 | 12.10 | 33.67 | 25.56 | 60.6 | 69.8 | 72.2 | 65.0 | 58.1 | 53.2 |
| 20 | 11.59 | 33.67 | 25.66 | 66.1 | 71.6 | 76.7 | 71.7 | 61.1 | 53.1 |
| 25 | 11.20 | 33.70 | 25.75 | 75.2 | 81.9 | 86.6 | 79.5 | 68.1 | 59.2 |
| 30 | 11.06 | 33.71 | 25.78 | 74.8 | 82.7 | 83.4 | 79.5 | 68.5 | 60.0 |
| 35 | 10.90 | 33.71 | 25.81 | 74.6 | 81.7 | 85.3 | 79.3 | 67.9 | 58.8 |
| 40 | 10.87 | 33.72 | 25.82 | 73.8 | 80.9 | 83.1 | 78.9 | 67.2 | 59.1 |
| 45 | 10.75 | 33.72 | 25.84 | 74.9 | 82.9 | 86.5 | 80.2 | 68.5 | 60.3 |
| 50 | 10.75 | 33.70 | 25.83 | 75.3 | 82.2 | 86.1 | 80.7 | 68.4 | 59.0 |
| 55 | 10.73 | 33.71 | 25.84 | 74.9 | 82.9 | 86.0 | 80.5 | 67.6 | 59.2 |
| 60 | 10.69 | 33.73 | 25.86 | 75.9 | 83.8 | 86.5 | 81.7 | 69.3 | 60.5 |
| 65 | 10.66 | 33.72 | 25.86 | 75.4 | 84.2 | 86.8 | 81.8 | 69.7 | 60.2 |
| 70 | 10.37 | 33.72 | 25.92 | 78.9 | 85.7 | 89.0 | 82.5 | 70.3 | 60.8 |
| 75 | 10.28 | 33.72 | 25.93 | 81.1 | 88.3 | 91.1 | 84.6 | 72.4 | 62.4 |
| 80 | 10.27 | 33.72 | 25.93 | 80.4 | 88.2 | 90.9 | 84.1 | 71.7 | 61.8 |
| 85 | 10.14 | 33.77 | 25.99 | 80.4 | 87.2 | 90.6 | 84.7 | 71.2 | 61.9 |
| 90 | 10.13 | 33.76 | 25.99 | 79.9 | 87.2 | 90.8 | 83.8 | 71.7 | 62.0 |

NASA 2 Station 09-01 9/9/77 0895

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.32 | 33.64 | 25.29 | 10.8 | 12.5 | 21.7 | 34.5 | 43.9 | 15.2 |
| 5 | 13.27 | 33.63 | 25.30 | 63.9 | 66.1 | 74.0 | 70.3 | 58.4 | 51.7 |
| 10 | 13.25 | 33.63 | 25.30 | 64.3 | 72.2 | 74.6 | 71.6 | 60.3 | 52.7 |
| 15 | 13.20 | 33.61 | 25.30 | 65.7 | 72.7 | 77.0 | 73.2 | 63.3 | 52.9 |
| 20 | 13.01 | 33.63 | 25.38 | 63.7 | 69.7 | 76.2 | 68.7 | 61.9 | 53.0 |
| 25 | 12.43 | 33.65 | 25.48 | 56.9 | 69.7 | 71.1 | 66.8 | 60.0 | 51.4 |
| 30 | 11.64 | 33.63 | 25.62 | 68.5 | 77.5 | 78.1 | 74.4 | 64.0 | 65.4 |
| 35 | 11.31 | 33.70 | 25.73 | 71.2 | 78.2 | 83.4 | 77.6 | 66.4 | 58.0 |
| 40 | 11.27 | 33.70 | 25.74 | 73.7 | 41.7 | 85.0 | 79.3 | 68.2 | 59.7 |
| 45 | 11.09 | 33.70 | 25.77 | 79.7 | 87.4 | 91.6 | 84.4 | 70.8 | 61.9 |
| 50 | 10.99 | 33.72 | 25.81 | 78.6 | 87.3 | 90.6 | 80.6 | 72.1 | 61.9 |
| 55 | 10.87 | 33.69 | 25.80 | 77.4 | 85.7 | 88.5 | 82.5 | 70.6 | 60.0 |
| 60 | 10.85 | 33.68 | 26.80 | 77.1 | 81.0 | 88.2 | 83.4 | 70.8 | 60.5 |
| 65 | 10.71 | 33.71 | 25.84 | 78.1 | 86.0 | 89.0 | 83.5 | 70.6 | 60.7 |
| 70 | 10.71 | 33.72 | 25.85 | 77.3 | 84.5 | 88.2 | 81.9 | 70.0 | 60.5 |
| 75 | 10.72 | 33.69 | 25.83 | 75.7 | 83.9 | 86.4 | 79.9 | 70.0 | 60.7 |
| 80 | 10.69 | 33.80 | 25.89 | 75.8 | 83.8 | 87.1 | 80.9 | 69.1 | 58.7 |
| 85 | 10.53 | 33.64 | 25.86 | 79.6 | 87.6 | 89.8 | 84.4 | 71.8 | 61.8 |
| 90 | 10.37 | 33.70 | 25.89 | 78.8 | 86.0 | 90.8 | 83.4 | 71.2 | 61.1 |

NASA 2 Station 09-02 9/9/77 1025

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.39 | 33.66 | 25.30 | 57.8 | 69.5 | 65.5 | 63.9 | 54.5 | 45.5 |
| 5 | 13.23 | 33.66 | 25.33 | 57.4 | 66.9 | 64.2 | 68.7 | 54.2 | 51.9 |
| 10 | 12.81 | 33.67 | 25.42 | 58.3 | 72.7 | 74.8 | 71.6 | 63.0 | 55.1 |
| 15 | 12.51 | 33.66 | 25.48 | 69.7 | 73.8 | 78.6 | 72.6 | 62.8 | 53.2 |
| 20 | 12.41 | 33.68 | 25.51 | 62.6 | 71.0 | 74.5 | 72.0 | 60.3 | 51.7 |
| 25 | 12.15 | 33.74 | 25.60 | 61.3 | 72.7 | 77.2 | 72.5 | 59.5 | 52.4 |
| 30 | 11.39 | 33.70 | 25.71 | 73.2 | 80.1 | 84.5 | 78.3 | 66.7 | 55.7 |
| 35 | 11.17 | 33.71 | 25.77 | 75.5 | 84.1 | 87.1 | 82.2 | 70.0 | 60.2 |
| 40 | 10.99 | 33.72 | 25.80 | 76.9 | 85.7 | 87.9 | 82.5 | 71.5 | 60.7 |
| 45 | 10.97 | 33.71 | 25.80 | 76.5 | 84.5 | 88.2 | 82.8 | 70.6 | 60.5 |
| 50 | 10.92 | 33.72 | 25.81 | 75.9 | 84.2 | 86.9 | 82.1 | 69.0 | 60.2 |
| 55 | 10.92 | 33.72 | 24.82 | 76.7 | 84.2 | 87.3 | 81.9 | 68.8 | 60.5 |
| 60 | 10.89 | 33.72 | 25.82 | 76.9 | 84.1 | 88.5 | 81.5 | 69.3 | 60.5 |
| 65 | 10.83 | 33.72 | 25.84 | 76.4 | 82.6 | 86.9 | 80.9 | 70.3 | 59.4 |
| 70 | 10.77 | 33.78 | 25.88 | 76.4 | 85.2 | 88.7 | 81.8 | 71.2 | 61.3 |
| 75 | 10.71 | 33.71 | 25.85 | 78.9 | 87.0 | 89.8 | 84.0 | 70.5 | 60.8 |
| 80 | 10.67 | 33.69 | 25.85 | 79.1 | 86.4 | 90.8 | 84.0 | 71.5 | 61.5 |
| 85 | 10.25 | 33.69 | 25.90 | 81.6 | 89.8 | 93.5 | 86.5 | 72.7 | 63.1 |
| 90 | 10.15 | 33.77 | 25.99 | 64.7 | 72.3 | 75.7 | 71.0 | 61.2 | 51.6 |

NASA 2 Station 09-03 9/9/77 1110

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.73 | 33.71 | 25.27 | 63.7 | 71.7 | 77.0 | 73.2 | 60.0 | 53.6 |
| 5 | 12.93 | 33.67 | 25.40 | 59.0 | 67.7 | 72.2 | 69.3 | 58.6 | 49.0 |
| 10 | 12.54 | 33.71 | 25.50 | 64.2 | 71.0 | 75.9 | 69.3 | 62.1 | 53.6 |
| 15 | 12.35 | 33.71 | 25.55 | 67.1 | 77.3 | 81.3 | 75.7 | 61.8 | 57.2 |
| 20 | 11.92 | 33.68 | 25.61 | 72.9 | 81.7 | 86.3 | 80.5 | 69.6 | 60.3 |
| 25 | 11.81 | 33.70 | 25.64 | 75.0 | 89.4 | 87.7 | 80.3 | 69.4 | 60.3 |
| 30 | 11.68 | 33.65 | 25.62 | 73.9 | 82.0 | 85.5 | 77.7 | 68.2 | 60.5 |
| 35 | 11.39 | 33.68 | 25.69 | 77.1 | 85.4 | 88.5 | 83.3 | 70.5 | 59.2 |
| 40 | 11.20 | 33.65 | 25.71 | 81.2 | 90.2 | 92.2 | 86.9 | 72.9 | 62.9 |
| 45 | 10.93 | 33.68 | 25.78 | 82.2 | 91.7 | 93.7 | 87.5 | 74.5 | 63.5 |
| 50 | 10.91 | 33.65 | 25.76 | 82.7 | 91.1 | 94.6 | 87.8 | 74.1 | 63.4 |
| 55 | 10.56 | 33.65 | 25.82 | 84.4 | 92.2 | 95.1 | 87.9 | 75.3 | 64.5 |
| 60 | 10.45 | 33.68 | 25.87 | 85.3 | 93.2 | 95.3 | 88.6 | 75.6 | 64.3 |
| 65 | 10.49 | 33.68 | 25.87 | 85.0 | 92.7 | 94.1 | 88.5 | 75.3 | 69.0 |
| 70 | 10.30 | 33.70 | 25.91 | 84.3 | 91.0 | 97.0 | 88.1 | 74.8 | 64.5 |
| 75 | 10.26 | 33.73 | 25.94 | 75.6 | 82.7 | 85.5 | 80.5 | 68.8 | 59.2 |
| 80 | 10.24 | 33.74 | 25.95 | 71.0 | 80.8 | 84.7 | 79.0 | 67.2 | 58.6 |
| 85 | 10.22 | 33.76 | 25.97 | 72.0 | 78.5 | 82.3 | 77.6 | 65.8 | 57.5 |

NASA 2 Station 09-04 9/9/77 1235

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.39 | 33.74 | 25.15 | 51.1 | 60.2 | 61.0 | 61.1 | 52.7 | 46.8 |
| 5 | 14.07 | 33.67 | 25.17 | 42.3 | 48.8 | 52.4 | 53.8 | 44.8 | 38.7 |
| 10 | 12.77 | 33.61 | 25.38 | 43.9 | 51.9 | 54.2 | 49.5 | 46.4 | 42.5 |
| 15 | 11.61 | 33.72 | 25.69 | 72.2 | 78.5 | 85.0 | 76.1 | 69.9 | 55.2 |
| 20 | 11.36 | 33.71 | 25.73 | 76.5 | 85.1 | 87.3 | 81.7 | 69.3 | 61.5 |
| 25 | 11.29 | 33.74 | 25.76 | 77.7 | 84.4 | 84.7 | 83.4 | 69.1 | 61.6 |
| 30 | 11.18 | 33.75 | 25.80 | 76.9 | 85.2 | 87.4 | 83.0 | 70.8 | 61.0 |
| 35 | 11.11 | 33.77 | 25.82 | 76.5 | 85.2 | 90.8 | 81.9 | 70.5 | 51.4 |
| 40 | 11.03 | 33.78 | 25.84 | 74.3 | 82.2 | 83.9 | 80.0 | 64.9 | 59.4 |
| 45 | 10.95 | 33.77 | 25.85 | 63.2 | 70.1 | 74.3 | 69.4 | 59.7 | 51.4 |
| 50 | 10.90 | 33.75 | 25.84 | 54.8 | 61.9 | 67.0 | 63.0 | 55.1 | 47.6 |
| 55 | 10.79 | 33.78 | 25.88 | 48.0 | 54.8 | 59.8 | 55.4 | 49.1 | 43.8 |

NASA 2 Station 09-05 9/9/77 1415

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.05 | 33.73 | 25.01 | 65.4 | 73.3 | 78.8 | 71.7 | 61.8 | 54.6 |
| 5 | 13.80 | 33.71 | 25.25 | 54.4 | 59.8 | 63.4 | 62.6 | 53.2 | 46.2 |
| 10 | 12.52 | 33.68 | 25.48 | 50.4 | 55.1 | 58.2 | 52.1 | 51.5 | 45.7 |
| 15 | 11.92 | 33.72 | 25.63 | 53.8 | 58.0 | 68.1 | 60.4 | 51.2 | 46.3 |
| 20 | 11.53 | 33.70 | 25.69 | 68.1 | 77.2 | 78.3 | 69.0 | 62.2 | 55.6 |
| 25 | 11.41 | 33.72 | 25.73 | 56.3 | 55.2 | 79.3 | 79.5 | 61.8 | 52.5 |

NASA 2 Station 09-06 9/9/77 1445

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.23 | 33.72 | 24.96 | 65.0 | 73.0 | 69.1 | 71.9 | 60.6 | 53.5 |
| 5 | 14.88 | 33.68 | 25.04 | 63.1 | 71.7 | 76.7 | 71.7 | 59.5 | 53.0 |
| 10 | 13.33 | 33.67 | 25.32 | 29.3 | 35.0 | 32.7 | 34.0 | 27.3 | 22.9 |
| 15 | 12.71 | 33.72 | 25.48 | 7.4 | 12.0 | 7.3 | 6.6 | 5.7 | 2.6 |
| 20 | 11.99 | 33.75 | 25.69 | 13.8 | 20.5 | 21.7 | 19.3 | 18.7 | 18.6 |

NASA 2 Station 09-07 9/9/77 1525

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.40 | 33.72 | 29.92 | 62.2 | 71.9 | 74.0 | 70.4 | 59.7 | 53.0 |
| 5 | 15.32 | 33.74 | 24.95 | 62.9 | 71.1 | 76.1 | 70.3 | 60.7 | 52.2 |
| 10 | 13.60 | 33.73 | 25.31 | 63.3 | 71.6 | 77.7 | 72.0 | 61.5 | 53.8 |
| 15 | 12.83 | 33.72 | 25.45 | 55.2 | 65.2 | 68.4 | 63.0 | 56.3 | 43.1 |

NASA 2 Station 09-08 9/9/77 1610

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.63 | 33.72 | 29.86 | 59.9 | 67.0 | 73.2 | 68.4 | 58.6 | 52.1 |
| 5 | 15.54 | 33.71 | 24.87 | 59.4 | 67.2 | 69.2 | 67.2 | 57.2 | 51.4 |
| 10 | 14.19 | 33.61 | 25.14 | 64.7 | 73.9 | 77.3 | 72.6 | 61.9 | 54.4 |

NASA 2 Station 09-09 9/9/77 1655

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.75 | 33.74 | 24.85 | 62.7 | 68.2 | 73.5 | 68.1 | 57.5 | 49.3 |
| 5 | 15.68 | 33.75 | 24.87 | 58.1 | 65.5 | 68.4 | 66.4 | 55.7 | 48.4 |
| 10 | 14.25 | 33.63 | 25.10 | 61.7 | 69.2 | 76.4 | 71.0 | 58.9 | 52.9 |

NASA 2 Station 10-01 9/10/77 0835

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.89 | 33.73 | 25.04 | 69.2 | 78.2 | 81.3 | 77.1 | 64.5 | 56.2 |
| 5 | 14.65 | 33.70 | 25.08 | 68.1 | 73.9 | 78.8 | 76.4 | 65.4 | 56.8 |
| 10 | 14.49 | 33.72 | 25.10 | 67.5 | 75.4 | 81.7 | 74.8 | 65.1 | 56.5 |

NASA 2 Station 10-02 9/10/77 0910

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.42 | 33.72 | 25.13 | 69.3 | 78.5 | 81.2 | 76.4 | 64.9 | 56.4 |
| 5 | 14.40 | 33.72 | 25.13 | 67.9 | 75.2 | 81.5 | 72.9 | 63.1 | 54.9 |
| 10 | 13.77 | 33.68 | 25.25 | 53.3 | 60.8 | 69.1 | 63.3 | 54.7 | 48.5 |
| 15 | 13.09 | 33.73 | 25.41 | 47.7 | 56.7 | 62.6 | 57.0 | 50.9 | 45.8 |
| 20 | 12.76 | 33.71 | 25.46 | 20.7 | 24.8 | 28.6 | 30.0 | 25.7 | 22.1 |

NASA 2 Station 10-03 9/10/77 0933

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.52 | 33.74 | 25.12 | 68.8 | 76.9 | 79.9 | 76.6 | 62.4 | 55.9 |
| 5 | 14.03 | 33.66 | 25.17 | 53.1 | 61.7 | 61.8 | 58.3 | 46.4 | 49.3 |
| 10 | 13.55 | 33.67 | 25.31 | 44.6 | 47.2 | 55.3 | 49.2 | 44.2 | 36.3 |
| 15 | 12.21 | 33.67 | 25.53 | 58.6 | 70.2 | 69.5 | 66.9 | 57.8 | 49.3 |
| 20 | 12.15 | 33.69 | 25.57 | 35.4 | 40.5 | 43.1 | 44.7 | 37.7 | 32.0 |

NASA 2 Station 10-04 9/10/77 1000

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.72 | 33.78 | 25.11 | 63.4 | 70.2 | 73.7 | 69.1 | 57.2 | 49.8 |
| 5 | 14.58 | 33.73 | 25.10 | 65.5 | 68.9 | 78.0 | 72.6 | 58.1 | 49.7 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma -t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 13.98 | 33.78 | 25.27 | 62.7 | 72.7 | 71.6 | 67.7 | 59.2 | 49.8 |
| 15 | 12.41 | 33.71 | 25.53 | 58.5 | 68.9 | 74.5 | 71.0 | 59.2 | 48.5 |
| 20 | 11.59 | 33.71 | 25.69 | 58.1 | 64.1 | 69.4 | 63.9 | 65.2 | 50.5 |
| 25 | 11.62 | 33.74 | 25.70 | 42.3 | 49.2 | 52.9 | 51.5 | 46.7 | 40.1 |

NASA 2 Station 10-05 9/10/77 1025

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.47 | 33.80 | 25.08 | 72.4 | 78.5 | 83.6 | 78.4 | 61.8 | 57.2 |
| 5 | 14.69 | 33.68 | 25.05 | 71.2 | 80.1 | 83.6 | 79.3 | 65.8 | 57.0 |
| 10 | 12.81 | 33.73 | 25.47 | 41.6 | 50.2 | 53.5 | 48.0 | 41.9 | 38.2 |
| 15 | 12.32 | 33.76 | 25.59 | 23.1 | 27.6 | 30.2 | 28.2 | 22.1 | 20.7 |
| 20 | 11.77 | 33.74 | 25.68 | 44.1 | 49.4 | 54.5 | 53.5 | 48.4 | 43.1 |
| 25 | 11.64 | 33.76 | 25.72 | 53.0 | 60.8 | 65.0 | 62.6 | 50.8 | 46.3 |

NASA 2 Station 10-06 9/10/77 1100

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.30 | 33.71 | 25.15 | 61.3 | 70.2 | 71.4 | 68.8 | 60.6 | 53.0 |
| 5 | 14.22 | 33.71 | 25.17 | 58.8 | 67.6 | 72.2 | 67.5 | 57.1 | 49.8 |
| 10 | 13.00 | 33.65 | 25.37 | 37.9 | 43.6 | 43.8 | 46.1 | 41.6 | 35.2 |
| 15 | 11.88 | 33.68 | 25.61 | 70.9 | 78.0 | 84.1 | 80.0 | 67.8 | 59.4 |
| 20 | 11.71 | 33.70 | 25.66 | 70.1 | 79.1 | 81.8 | 76.4 | 65.8 | 56.7 |
| 25 | 11.62 | 33.76 | 25.72 | 68.8 | 77.3 | 81.0 | 76.3 | 65.7 | 56.7 |
| 30 | 11.54 | 33.74 | 25.72 | 67.8 | 76.1 | 80.9 | 76.7 | 62.5 | 57.5 |
| 35 | 11.48 | 33.77 | 25.76 | 69.3 | 77.5 | 81.2 | 75.5 | 63.7 | 57.3 |
| 40 | 11.29 | 33.77 | 25.78 | 53.7 | 61.4 | 67.4 | 63.2 | 54.4 | 47.8 |

| Dept (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 11.18 | 33.78 | 25.81 | 46.7 | 53.9 | 57.8 | 55.9 | 48.7 | 44.1 |
| 50 | 11.14 | 33.77 | 25.81 | 42.1 | 48.5 | 51.3 | 50.9 | 45.1 | 39.9 |
| 55 | 11.10 | 33.77 | 25.82 | 46.6 | 54.7 | 58.0 | 57.2 | 48.2 | 42.0 |
| 60 | 11.00 | 33.79 | 25.86 | 51.8 | 59.2 | 62.5 | 61.0 | 52.3 | 46.6 |
| NASA 2 | Station 10-07 | | 9/10/77 | 1200 | | | | | |
| 1 | 13.62 | 33.74 | 25.31 | 40.8 | 46.1 | 66.8 | 63.4 | 65.1 | 57.8 |
| 5 | 13.97 | 33.65 | 25.28 | 67.4 | 75.4 | 79.9 | 73.4 | 62.2 | 55.4 |
| 10 | 12.90 | 33.67 | 25.40 | 63.2 | 67.9 | 77.5 | 64.3 | 61.3 | 48.9 |
| 15 | 12.57 | 33.70 | 25.49 | 63.7 | 67.6 | 76.1 | 71.0 | 59.7 | 53.0 |
| 20 | 12.45 | 33.69 | 25.51 | 66.1 | 75.0 | 78.8 | 72.0 | 60.9 | 51.1 |
| 25 | 12.06 | 33.70 | 25.59 | 68.4 | 77.2 | 80.5 | 73.6 | 65.1 | 55.1 |
| 30 | 11.64 | 33.70 | 25.67 | 74.5 | 83.3 | 88.4 | 81.2 | 69.1 | 60.8 |
| 35 | 11.51 | 33.73 | 25.71 | 77.1 | 85.5 | 88.4 | 81.8 | 70.2 | 61.1 |
| 40 | 11.42 | 33.72 | 25.72 | 79.0 | 87.3 | 91.7 | 84.4 | 72.4 | 61.0 |
| 45 | 11.25 | 33.68 | 25.72 | 81.5 | 88.9 | 48.7 | 47.4 | 74.1 | 62.1 |
| 50 | 11.07 | 33.71 | 25.78 | 82.8 | 91.4 | 94.8 | 89.1 | 75.0 | 64.0 |
| 55 | 10.90 | 33.71 | 25.81 | 83.2 | 91.9 | 94.6 | 87.5 | 73.8 | 64.2 |
| 60 | 10.76 | 33.71 | 25.82 | 83.8 | 90.2 | 94.9 | 87.4 | 73.9 | 64.3 |
| 65 | 10.61 | 33.73 | 25.87 | 82.7 | 90.5 | 93.2 | 86.2 | 73.0 | 62.3 |
| 70 | 10.48 | 33.74 | 25.91 | 78.1 | 85.2 | 89.2 | 83.4 | 71.2 | 61.1 |
| 75 | 10.47 | 33.77 | 25.93 | 77.8 | 84.4 | 88.4 | 83.0 | 70.5 | 61.8 |

NASA 2 Station 10-08 9/10/77 1230

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.68 | 33.69 | 25.26 | 71.7 | 79.2 | 81.3 | 77.6 | 65.8 | 56.7 |
| 5 | 13.42 | 33.68 | 25.31 | 67.1 | 72.6 | 78.9 | 73.8 | 63.6 | 54.6 |
| 10 | 13.18 | 33.70 | 25.73 | 66.2 | 73.0 | 79.3 | 72.2 | 64.6 | 56.8 |
| 15 | 12.82 | 33.68 | 25.43 | 68.8 | 78.6 | 82.0 | 77.1 | 65.2 | 57.3 |
| 20 | 12.63 | 33.68 | 25.47 | 68.7 | 79.9 | 81.3 | 78.3 | 66.4 | 88.1 |
| 25 | 12.20 | 33.70 | 25.56 | 68.4 | 80.0 | 83.7 | 77.6 | 67.0 | 57.2 |
| 30 | 11.88 | 33.71 | 25.63 | 70.9 | 78.8 | 84.5 | 77.7 | 67.2 | 55.7 |
| 35 | 11.82 | 33.69 | 25.63 | 72.7 | 81.0 | 85.7 | 79.3 | 68.5 | 57.6 |
| 40 | 11.33 | 33.69 | 25.72 | 76.5 | 85.5 | 88.7 | 82.4 | 71.4 | 60.8 |
| 45 | 11.06 | 33.69 | 25.75 | 80.8 | 88.0 | 92.2 | 86.0 | 71.5 | 62.9 |
| 50 | 10.93 | 33.71 | 25.80 | 80.1 | 87.0 | 89.5 | 83.1 | 70.8 | 62.7 |
| 55 | 10.91 | 33.75 | 25.84 | 78.5 | 86.6 | 89.7 | 83.5 | 70.0 | 60.7 |
| 60 | 10.82 | 33.74 | 25.85 | 79.7 | 87.6 | 90.8 | 82.7 | 71.4 | 61.5 |
| 65 | 10.76 | 33.75 | 25.87 | 79.2 | 86.3 | 90.8 | 83.5 | 70.8 | 61.0 |
| 70 | 10.55 | 33.73 | 25.89 | 79.0 | 88.0 | 90.5 | 83.7 | 70.3 | 61.6 |
| 75 | 10.36 | 33.77 | 25.95 | 68.2 | 76.0 | 79.6 | 74.5 | 63.9 | 55.7 |

NASA 2 Station 10-09 9/10/77 1325

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.65 | 33.70 | 25.07 | 67.0 | 73.6 | 76.9 | 72.9 | 60.7 | 56.8 |
| 5 | 13.79 | 33.68 | 25.23 | 67.2 | 70.4 | 76.1 | 69.3 | 58.8 | 52.2 |
| 10 | 13.33 | 33.73 | 25.36 | 60.9 | 69.5 | 72.9 | 68.8 | 58.6 | 53.3 |
| 15 | 12.92 | 33.72 | 25.44 | 55.9 | 70.5 | 52.7 | 71.3 | 59.7 | 50.8 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 12.61 | 33.70 | 25.49 | 58.1 | 57.5 | 67.0 | 71.2 | 61.2 | 50.9 |
| 25 | 12.40 | 33.73 | 25.55 | 68.6 | 73.6 | 82.3 | 76.0 | 61.2 | 55.2 |
| 30 | 12.14 | 33.71 | 25.58 | 71.9 | 81.9 | 89.2 | 79.3 | 67.5 | 59.7 |
| 35 | 11.79 | 33.70 | 25.64 | 73.6 | 82.3 | 85.0 | 80.2 | 68.5 | 60.2 |
| 40 | 11.40 | 33.71 | 25.72 | 78.7 | 85.5 | 92.1 | 84.3 | 72.6 | 62.9 |
| 45 | 10.97 | 33.75 | 25.83 | 82.6 | 90.1 | 93.7 | 86.3 | 73.8 | 63.2 |
| 50 | 10.88 | 33.77 | 25.86 | 81.1 | 88.6 | 92.5 | 86.2 | 72.7 | 61.9 |
| 55 | 10.87 | 33.77 | 25.87 | 80.5 | 87.9 | 93.0 | 85.4 | 71.7 | 62.3 |
| 60 | 10.84 | 33.77 | 25.87 | 75.7 | 87.4 | 92.2 | 84.4 | 72.3 | 62.9 |

NASA 2 Station 10-10 9/10/77 1350

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.76 | 33.72 | 25.06 | 51.2 | 58.3 | 76.1 | 71.3 | 60.9 | 54.4 |
| 5 | 14.20 | 33.69 | 25.15 | 71.3 | 79.7 | 78.6 | 75.8 | 60.0 | 53.8 |
| 10 | 13.40 | 33.71 | 25.34 | 56.9 | 68.8 | 69.8 | 66.2 | 56.3 | 44.2 |
| 15 | 12.43 | 33.67 | 25.50 | 55.5 | 62.7 | 64.1 | 61.0 | 49.9 | 44.3 |
| 20 | 11.75 | 33.66 | 25.61 | 72.0 | 76.3 | 84.1 | 79.6 | 67.2 | 57.8 |
| 25 | 11.58 | 33.70 | 25.69 | 80.7 | 88.0 | 91.3 | 84.0 | 71.1 | 63.2 |
| 30 | 11.41 | 33.71 | 25.72 | 80.8 | 89.2 | 92.1 | 84.3 | 73.5 | 62.6 |
| 35 | 11.33 | 33.70 | 25.73 | 82.5 | 88.0 | 92.1 | 87.6 | 74.6 | 63.4 |
| 40 | 11.24 | 33.75 | 25.78 | 71.0 | 78.8 | 82.9 | 76.3 | 64.9 | 57.5 |

NASA 2 Station 10-11 9/10/77 1415

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.79 | 33.70 | 25.04 | 74.7 | 74.1 | 84.1 | 80.2 | 68.8 | 58.1 |
| 5 | 14.35 | 33.61 | 25.07 | 62.9 | 72.6 | 71.6 | 70.1 | 59.7 | 53.2 |
| 10 | 13.02 | 33.68 | 25.39 | 57.5 | 63.3 | 58.3 | 64.8 | 52.3 | 42.2 |
| 15 | 12.44 | 33.60 | 25.44 | 64.7 | 70.4 | 75.6 | 71.7 | 61.5 | 57.0 |
| 20 | 11.91 | 33.66 | 25.58 | 73.4 | 82.7 | 86.1 | 78.4 | 66.7 | 59.9 |
| 25 | 11.73 | 33.65 | 25.61 | 75.4 | 84.1 | 86.8 | 81.9 | 70.0 | 60.2 |
| 30 | 11.66 | 33.70 | 25.66 | 62.6 | 69.5 | 73.7 | 67.2 | 56.9 | 51.6 |
| 35 | 11.54 | 33.71 | 25.70 | 53.8 | 62.0 | 64.7 | 63.2 | 53.3 | 47.9 |

NASA 2 Station 10-12 9/10/77 1435

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.86 | 33.71 | 25.03 | 69.4 | 77.0 | 80.1 | 71.2 | 63.1 | 55.9 |
| 5 | 14.38 | 33.69 | 25.12 | 67.8 | 76.3 | 79.3 | 75.1 | 63.7 | 55.7 |
| 10 | 12.84 | 33.61 | 25.37 | 39.3 | 42.5 | 47.8 | 45.4 | 36.9 | 26.4 |
| 15 | 12.12 | 33.69 | 25,57 | 37.9 | 47.6 | 49.5 | 45.7 | 40.7 | 35.2 |
| 20 | 12.09 | 33.69 | 25.58 | 40.7 | 47.5 | 51.9 | 46.4 | 40.4 | 34.4 |

NASA 2 Station 10-13 9/10/77 1455

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.93 | 33.81 | 25.09 | 69.6 | 76.7 | 82.0 | 75.7 | 63.0 | 55.2 |
| 5 | 14.29 | 33.69 | 25.15 | 67.2 | 76.9 | 78.9 | 73.9 | 62.7 | 56.0 |
| 10 | 14.02 | 33.70 | 25.20 | 62.7 | 72.0 | 76.7 | 72.2 | 61.5 | 52.7 |
| 15 | 13.45 | 33.49 | 25.24 | 46.0 | 54.4 | 57.2 | 54.6 | 66.0 | 40.3 |

NASA 2 Station 10-14 9/10/77 1605

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.80 | 33.76 | 25.29 | 61.4 | 66.6 | 67.4 | 64.5 | 55.9 | 46.2 |
| 5 | 13.55 | 33.68 | 25.27 | 58.4 | 66.6 | 65.8 | 67.7 | 57.5 | 49.0 |
| 10 | 12.77 | 33.69 | 25.44 | 61.6 | 71.7 | 75.9 | 66.8 | 56.6 | 52.5 |
| 15 | 12.40 | 33.69 | 25.53 | 66.0 | 73.9 | 78.9 | 72.9 | 60.7 | 50.8 |
| 20 | 12.18 | 33.69 | 25.56 | 63.3 | 68.5 | 75.3 | 71.2 | 60.0 | 49.7 |
| 25 | 11.75 | 33.68 | 25.64 | 75.0 | 84.2 | 86.6 | 82.5 | 69.0 | 61.8 |
| 30 | 11.28 | 33.66 | 25.70 | 81.8 | 83.5 | 92.2 | 86.2 | 72.7 | 63.5 |
| 35 | 10.97 | 33.70 | 25.79 | 83.7 | 91.4 | 95.7 | 87.9 | 73.9 | 61.8 |
| 40 | 10.83 | 33.68 | 25.80 | 83.5 | 91.3 | 94.3 | 87.8 | 74.5 | 64.0 |
| 45 | 10.85 | 33.71 | 25.83 | 82.0 | 90.4 | 94.0 | 85.9 | 72.6 | 63.1 |
| 50 | 10.85 | 33.72 | 25.83 | 81.3 | 89.5 | 92.9 | 58.9 | 73.2 | 63.1 |
| 55 | 10.84 | 33.73 | 25.85 | 80.9 | 88.8 | 81.0 | 85.7 | 71.5 | 62.7 |
| 60 | 10.81 | 33.77 | 25.88 | 80.7 | 87.7 | 90.8 | 84.6 | 71.8 | 62.9 |

NASA 2 Station 10-15 9/10/77 1650

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.46 | 33.72 | 24.90 | 66.5 | 74.7 | 79.6 | 73.9 | 62.4 | 55.7 |
| 5 | 15.26 | 33.68 | 24.92 | 69.5 | 78.3 | 78.8 | 76.3 | 64.5 | 56.0 |
| 10 | 14.30 | 33.71 | 25.15 | 67.9 | 61.6 | 80.2 | 75.0 | 63.0 | 55.1 |
| 15 | 13.53 | 33.67 | 25.27 | 63.7 | 68.3 | 74.8 | 68.8 | 58.0 | 48.4 |
| 20 | 13.00 | 33.56 | 25.30 | 44.0 | 52.3 | 52.4 | 49.2 | 43.1 | 39.1 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 11.94 | 33.66 | 25.58 | 46.9 | 52.3 | 57.4 | 50.8 | 44.0 | 41.4 |
| 30 | 11.64 | 33.74 | 25.70 | 54.0 | 62.5 | 65.5 | 65.2 | 54.1 | 48.5 |
| 35 | 11.44 | 33.75 | 25.75 | 60.7 | 61.3 | 70.5 | 67.1 | 56.2 | 50.6 |
| NASA 2 | Station 10-16 | 9/10/77 | 1700 | | | | | | |
| 1 | 15.77 | 33.72 | 24.84 | 62.2 | 72.6 | 76.7 | 73.5 | 63.4 | 54.4 |
| 5 | 14.87 | 33.73 | 25.05 | 70.8 | 80.8 | 81.2 | 77.0 | 65.7 | 59.1 |
| 10 | 13.82 | 33.67 | 25.22 | 65.2 | 70.4 | 79.4 | 72.3 | 62.8 | 54.4 |
| 15 | 12.08 | 33.74 | 25.62 | 39.0 | 48.5 | 50.6 | 48.0 | 41.0 | 37.6 |
| 20 | 11.90 | 33.75 | 25.66 | 24.3 | 29.8 | 35.3 | 35.2 | 30.6 | 28.0 |
| 25 | 11.75 | 33.74 | 25.68 | 31.4 | 37.9 | 41.4 | 41.9 | 35.3 | 33.2 |
| NASA 2 | Station 10-17 | 9/10/77 | 1720 | | | | | | |
| 1 | 15.72 | 33.74 | 24.86 | 51.0 | 58.6 | 63.1 | 54.7 | 52.0 | 45.7 |
| 5 | 14.87 | 33.70 | 25.02 | 67.6 | 77.5 | 79.6 | 73.2 | 64.6 | 56.5 |
| 10 | 13.18 | 33.66 | 25.34 | 30.2 | 32.0 | 41.0 | 35.3 | 29.6 | 23.5 |
| 15 | 12.91 | 33.69 | 25.42 | 38.7 | 45.2 | 47.8 | 44.7 | 41.9 | 37.1 |
| 20 | 12.59 | 33.72 | 25.50 | 26.5 | 32.5 | 36.7 | 36.6 | 29.1 | 26.9 |
| NASA 2 | Station 10-18 | 9/10/77 | 1740 | | | | | | |
| 1 | 15.84 | 33.74 | 24.84 | 46.5 | 56.0 | 59.6 | 58.1 | 50.3 | 43.4 |
| 5 | 14.66 | 33.69 | 25.05 | 49.9 | 57.9 | 62.2 | 58.2 | 49.4 | 44.9 |
| 10 | 14.03 | 33.73 | 25.22 | 28.5 | 33.0 | 37.5 | 36.6 | 31.7 | 30.4 |

NASA 2 Station 11-01 9/11/77 0835

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.06 | 33.73 | 25.00 | 69.9 | 78.6 | 82.6 | 77.6 | 64.4 | 56.8 |
| 5 | 14.80 | 33.78 | 25.09 | 70.6 | 78.5 | 84.5 | 77.7 | 65.5 | 57.2 |
| 10 | 14.70 | 33.72 | 25.08 | 72.0 | 79.5 | 83.4 | 78.2 | 67.3 | 57.8 |

NASA 2 Station 11-02 9/11/77 0915

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.65 | 33.71 | 25.08 | 71.0 | 78.8 | 83.3 | 75.4 | 65.4 | 56.8 |
| 5 | 14.60 | 33.70 | 25.08 | 70.5 | 78.9 | 82.5 | 76.6 | 64.9 | 56.8 |
| 10 | 13.37 | 33.70 | 25.33 | 63.2 | 74.1 | 72.9 | 66.2 | 62.2 | 52.1 |
| 15 | 13.02 | 33.77 | 25.45 | 63.6 | 69.4 | 74.8 | 72.8 | 58.0 | 52.5 |

NASA 2 Station 11-03 9/11/77 1205

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.77 | 33.61 | 25.18 | 54.1 | 65.0 | 57.0 | 66.4 | 48.2 | 50.9 |
| 5 | 13.70 | 33.58 | 25.17 | 67.7 | 73.8 | 75.9 | 72.9 | 61.0 | 54.6 |
| 10 | 13.26 | 33.64 | 25.31 | 70.5 | 76.4 | 80.2 | 75.1 | 67.7 | 56.2 |
| 15 | 12.94 | 33.65 | 25.38 | 71.5 | 75.0 | 78.6 | 60.7 | 61.3 | 57.3 |
| 20 | 12.59 | 33.66 | 25.43 | 70.9 | 73.9 | 76.7 | 77.1 | 69.5 | 40.3 |
| 25 | 12.20 | 33.69 | 25.55 | 75.3 | 84.9 | 87.6 | 84.3 | 70.2 | 61.6 |
| 30 | 11.87 | 33.70 | 25.63 | 76.8 | 86.4 | 91.1 | 83.4 | 71.7 | 62.9 |
| 35 | 11.83 | 33.69 | 25.63 | 77.9 | 87.7 | 92.9 | 83.3 | 72.9 | 59.9 |
| 40 | 11.45 | 33.57 | 25.60 | 80.2 | 90.2 | 94.0 | 86.5 | 74.2 | 63.1 |
| 45 | 10.90 | 33.65 | 25.76 | 85.8 | 92.9 | 97.0 | 89.7 | 76.0 | 65.6 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | o/o Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 10.82 | 33.75 | 25.85 | 85.4 | 93.2 | 96.1 | 88.5 | 75.7 | 65.6 |
| 55 | 10.71 | 33.76 | 25.88 | 84.0 | 92.0 | 94.6 | 88.1 | 74.5 | 63.7 |
| 60 | 10.56 | 33.74 | 25.90 | 85.6 | 91.4 | 97.2 | 88.2 | 76.3 | 66.1 |
| 65 | 10.30 | 33.68 | 25.88 | 86.6 | 91.6 | 96.4 | 89.7 | 75.6 | 65.1 |
| 70 | 10.19 | 33.73 | 25.95 | 87.1 | 94.4 | 96.7 | 89.1 | 74.8 | 65.3 |
| 75 | 10.15 | 33.78 | 25.99 | 87.1 | 94.2 | 92.9 | 90.0 | 73.8 | 65.8 |
| 80 | 10.06 | 33.79 | 26.02 | 87.1 | 93.8 | 96.9 | 89.5 | 76.2 | 65.8 |
| 85 | 9.89 | 33.84 | 25.09 | 87.5 | 94.4 | 96.9 | 90.1 | 75.4 | 65.3 |
| 90 | 9.78 | 33.84 | 26.11 | 87.4 | 94.2 | 97.0 | 89.5 | 76.0 | 65.4 |

NASA 2 Station 11-04 9/11/77 1205

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.77 | 33.65 | 25.00 | 69.3 | 76.1 | 76.7 | 75.7 | 64.0 | 52.2 |
| 5 | 14.71 | 33.63 | 25.00 | 68.8 | 75.7 | 79.4 | 71.7 | 63.7 | 54.6 |
| 10 | 14.40 | 33.69 | 25.11 | 56.4 | 62.5 | 68.6 | 65.5 | 55.6 | 47.8 |
| 15 | 13.98 | 33.62 | 25.14 | 50.8 | 49.2 | 43.9 | 60.4 | 50.3 | 42.3 |
| 20 | 13.10 | 33.64 | 25.34 | 68.3 | 75.8 | 80.4 | 77.7 | 65.2 | 56.8 |
| 25 | 12.45 | 33.65 | 25.48 | 79.6 | 84.7 | 88.6 | 81.9 | 70.0 | 57.3 |
| 30 | 12.14 | 33.70 | 25.57 | 79.4 | 88.2 | 91.1 | 89.9 | 71.4 | 61.8 |
| 35 | 11.86 | 33.70 | 25.63 | 81.7 | 89.5 | 92.4 | 87.2 | 71.1 | 63.5 |
| 40 | 11.34 | 33.69 | 25.71 | 81.8 | 87.7 | 92.9 | 85.7 | 73.2 | 63.4 |
| 45 | 11.24 | 33.70 | 25.74 | 81.6 | 89.4 | 93.0 | 87.2 | 73.8 | 63.4 |
| 50 | 11.15 | 33.77 | 25.81 | 82.5 | 90.5 | 92.5 | 86.5 | 73.6 | 63.5 |
| 55 | 10.57 | 33.60 | 25.78 | 86.0 | 92.4 | 99.9 | 88.8 | 75.1 | 69.8 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 60 | 10.35 | 33.66 | 25.87 | 86.1 | 93.8 | 95.7 | 89.7 | 75.1 | 64.8 |
| 65 | 10.28 | 33.66 | 25.88 | 82.3 | 93.6 | 94.6 | 89.5 | 75.3 | 65.1 |
| 70 | 10.09 | 33.73 | 25.97 | 87.2 | 94.1 | 96.7 | 89.4 | 75.6 | 65.0 |
| 75 | 9.98 | 33.73 | 25.98 | 87.4 | 93.9 | 96.4 | 89.2 | 75.6 | 65.1 |
| 80 | 9.83 | 33.76 | 26.03 | 87.8 | 94.8 | 97.5 | 90.2 | 75.9 | 65.8 |
| 85 | 9.72 | 33.78 | 26.06 | 88.1 | 94.9 | 97.7 | 90.1 | 76.0 | 64.2 |
| 90 | 9.66 | 33.83 | 26.12 | 88.0 | 94.4 | 97.3 | 90.2 | 76.0 | 65.3 |

NASA 2 Station 11-05 9/11/77 1615

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.18 | 33.59 | 25.08 | 73.0 | 77.6 | 82.0 | 76.8 | 66.1 | 58.1 |
| 5 | 14.09 | 33.60 | 25.11 | 71.7 | 79.2 | 82.0 | 77.1 | 65.4 | 55.2 |
| 10 | 13.59 | 33.57 | 25.18 | 63.7 | 77.0 | 72.6 | 75.7 | 62.8 | 55.4 |
| 15 | 13.06 | 33.66 | 25.37 | 66.4 | 72.2 | 67.0 | 73.6 | 61.2 | 52.9 |
| 20 | 12.88 | 33.68 | 25.41 | 67.4 | 75.1 | 80.2 | 77.6 | 67.4 | 58.4 |
| 25 | 12.32 | 33.68 | 25.51 | 75.1 | 84.4 | 86.9 | 83.8 | 70.2 | 60.8 |
| 30 | 11.42 | 33.54 | 25.58 | 81.9 | 90.5 | 90.6 | 85.0 | 72.0 | 62.4 |
| 35 | 11.48 | 33.75 | 25.73 | 75.8 | 83.9 | 87.4 | 81.9 | 69.1 | 60.8 |
| 40 | 11.21 | 33.74 | 25.78 | 76.4 | 85.4 | 88.4 | 81.9 | 69.7 | 61.6 |
| 45 | 11.07 | 33.71 | 25.78 | 84.6 | 92.3 | 91.3 | 87.9 | 79.2 | 64.8 |
| 50 | 10.52 | 33.66 | 25.84 | 85.0 | 92.3 | 95.6 | 88.4 | 74.7 | 69.8 |
| 55 | 10.40 | 33.75 | 25.92 | 83.0 | 90.5 | 93.8 | 86.7 | 73.5 | 63.5 |
| 60 | 10.25 | 33.77 | 25.97 | 85.8 | 92.9 | 95.6 | 88.6 | 79.8 | 63.8 |
| 65 | 10.03 | 33.80 | 26.03 | 87.4 | 94.8 | 96.5 | 89.5 | 75.9 | 63.5 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | o/o Transmission | | | |
| 70 | 9.98 | 33.79 | 26.03 | 87.9 | 94.4 | 99.1 | 89.7 | 76.2 | 65.4 |
| 75 | 9.88 | 33.83 | 26.08 | 87.3 | 94.8 | 80.9 | 90.2 | 75.7 | 65.4 |
| 80 | 9.77 | 33.83 | 26.10 | 87.7 | 94.2 | 97.5 | 90.1 | 75.7 | 65.1 |
| 85 | 9.75 | 33.85 | 26.12 | 87.2 | 94.1 | 97.5 | 89.1 | 76.0 | 65.3 |
| 90 | 9.66 | 33.85 | 26.14 | 88.1 | 94.4 | 116.9 | 89.7 | 77.4 | 65.3 |

NASA 2 Station 12-01 9/12/77 0845

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 13.44 | 33.66 | 25.29 | 59.3 | 72.9 | 72.2 | 66.8 | 61.9 | 49.7 |
| 10 | 12.96 | 33.66 | 25.39 | 56.0 | 65.2 | 71.0 | 68.7 | 58.0 | 51.3 |
| 15 | 12.65 | 33.70 | 25.48 | 61.5 | 65.7 | 75.9 | 70.6 | 59.6 | 51.6 |
| 20 | 12.16 | 33.65 | 25.53 | 68.4 | 76.7 | 80.4 | 76.6 | 65.8 | 55.4 |
| 25 | 11.65 | 33.71 | 25.68 | 76.9 | 84.9 | 87.7 | 80.3 | 69.9 | 60.3 |
| 30 | 11.52 | 33.73 | 25.71 | 78.1 | 85.2 | 89.0 | 84.0 | 70.8 | 62.6 |
| 35 | 11.39 | 33.73 | 25.74 | 80.5 | 88.3 | 91.3 | 85.6 | 71.7 | 63.2 |
| 40 | 11.36 | 33.75 | 25.76 | 79.9 | 90.1 | 93.3 | 86.6 | 73.0 | 63.8 |
| 45 | 11.33 | 33.73 | 25.75 | 81.2 | 89.5 | 93.2 | 87.5 | 72.6 | 63.1 |
| 50 | 11.26 | 33.72 | 25.76 | 81.0 | 88.2 | 90.3 | 84.4 | 72.9 | 62.6 |
| 55 | 11.19 | 33.72 | 25,76 | 80.8 | 88.3 | 92.2 | 85.1 | 72.9 | 62.9 |
| 60 | 11.14 | 33.72 | 25.78 | 80.1 | 69.2 | 90.0 | 85.0 | 72.3 | 58.4 |
| 65 | 10.99 | 33.74 | 25.81 | 81.1 | 88.3 | 93.2 | 85.6 | 72.9 | 63.1 |
| 70 | 10.95 | 33.74 | 25.83 | 81.2 | 88.3 | 92.5 | 85.1 | 72.6 | 62.4 |
| 75 | 10.94 | 33.75 | 25.83 | 80.4 | 88.5 | 91.1 | 84.9 | 72.4 | 62.6 |
| 80 | 10.67 | 33.71 | 25.85 | 80.1 | 87.9 | 91.3 | 85.1 | 72.1 | 62.9 |
| 85 | 10.45 | 33.76 | 25.83 | 79.1 | 87.3 | 89.3 | 86.6 | 70.6 | 61.0 |
| 90 | 10.38 | 33.77 | 25.95 | 81.1 | 88.0 | 89.8 | 85.9 | 72.0 | 62.7 |

NASA 2 Station 12-02 9/12/77 0945

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.55 | 33.75 | 25.34 | 56.2 | 64.7 | 68.6 | 64.0 | 55.1 | 49.7 |
| 5 | 13.22 | 33.67 | 25.35 | 59.6 | 67.2 | 70.5 | 67.4 | 58.3 | 51.9 |
| 10 | 12.97 | 33.69 | 25.41 | 60.4 | 62.3 | 63.8 | 69.6 | 61.2 | 50.1 |
| 15 | 12.67 | 33.69 | 25.47 | 62.5 | 72.3 | 71.8 | 70.4 | 58.9 | 48.9 |
| 20 | 12.34 | 33.70 | 25.53 | 65.6 | 73.0 | 77.0 | 70.6 | 63.9 | 52.2 |
| 25 | 12.24 | 33.70 | 25.55 | 69.1 | 76.6 | 78.5 | 74.2 | 62.5 | 55.6 |
| 30 | 12.25 | 33.70 | 25.55 | 68.3 | 77.3 | 82.0 | 76.6 | 64.0 | 55.9 |
| 35 | 11.64 | 33.70 | 25.67 | 74.3 | 82.4 | 87.1 | 79.8 | 68.8 | 59.9 |
| 40 | 11.41 | 33.72 | 25.73 | 79.8 | 88.3 | 90.8 | 84.9 | 72.1 | 63.1 |
| 45 | 11.30 | 33.72 | 25.75 | 80.0 | 86.1 | 91.6 | 85.7 | 72.0 | 62.9 |
| 50 | 11.24 | 33.74 | 25.77 | 79.2 | 87.4 | 91.3 | 85.7 | 71.4 | 62.4 |
| 55 | 11.23 | 33.72 | 25.76 | 80.1 | 88.5 | 91.1 | 85.1 | 71.4 | 61.1 |
| 60 | 11.21 | 33.73 | 25.77 | 80.4 | 89.4 | 91.7 | 86.2 | 72.9 | 63.2 |
| 65 | 11.19 | 33.73 | 25.78 | 80.8 | 89.7 | 93.8 | 84.9 | 67.5 | 62.4 |
| 70 | 11.00 | 33.73 | 25.81 | 80.4 | 88.5 | 92.2 | 85.7 | 72.9 | 62.9 |
| 75 | 10.83 | 33.76 | 25.86 | 81.2 | 89.9 | 92.2 | 85.9 | 72.4 | 63.2 |
| 80 | 10.76 | 33.75 | 25.87 | 79.9 | 87.7 | 91.6 | 84.9 | 73.0 | 61.5 |
| 85 | 10.50 | 33.75 | 25.91 | 77.6 | 85.7 | 87.4 | 81.5 | 69.6 | 60.3 |
| 90 | 10.33 | 33.79 | 25.98 | 67.0 | 71.1 | 74.0 | 68.4 | 59.1 | 51.6 |

NASA 2 Station 12-03 9/12/77

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13.69 | 33.71 | 25.27 | 54.7 | 64.7 | 67.9 | 64.3 | 53.5 | 47.8 |
| 5 | 13.50 | 33.70 | 25.31 | 56.3 | 60.8 | 63.3 | 61.6 | 52.9 | 45.5 |
| 10 | 13.06 | 33.62 | 25.34 | 49.6 | 65.5 | 66.2 | 61.8 | 54.8 | 46.6 |
| 15 | 12.52 | 33.71 | 25.51 | 59.6 | 68.5 | 69.8 | 69.6 | 56.6 | 49.0 |
| 20 | 12.32 | 33.69 | 25.54 | 66.2 | 74.5 | 75.4 | 73.1 | 62.4 | 54.8 |
| 25 | 12.12 | 33.69 | 25.56 | 72.0 | 78.2 | 83.4 | 77.6 | 65.5 | 55.9 |
| 30 | 11.77 | 33.70 | 25.65 | 74.0 | 81.6 | 86.9 | 81.1 | 68.7 | 59.9 |
| 35 | 11.57 | 33.70 | 25.68 | 77.8 | 85.4 | 88.9 | 83.5 | 69.9 | 61.3 |
| 40 | 11.33 | 33.71 | 25.73 | 77.6 | 86.0 | 88.5 | 83.1 | 70.5 | 61.0 |
| 45 | 11.17 | 33.71 | 25.76 | 79.4 | 86.9 | 90.5 | 83.1 | 71.7 | 61.3 |
| 50 | 11.11 | 33.74 | 25.80 | 80.1 | 87.6 | 90.5 | 85.6 | 70.8 | 61.6 |
| 55 | 11.13 | 33.74 | 25.79 | 80.0 | 88.0 | 90.1 | 85.3 | 72.7 | 63.2 |
| 60 | 11.04 | 33.76 | 25.83 | 80.4 | 88.2 | 90.8 | 84.9 | 72.4 | 61.8 |
| 65 | 11.07 | 33.76 | 25.82 | 75.9 | 83.0 | 87.6 | 82.1 | 69.7 | 60.3 |
| 70 | 10.86 | 33.79 | 25.88 | 69.8 | 76.7 | 80.1 | 76.1 | 64.6 | 56.5 |
| 75 | 10.83 | 33.79 | 25.88 | 73.6 | 81.3 | 84.4 | 79.6 | 67.5 | 58.0 |
| 80 | 10.62 | 33.73 | 25.87 | 59.0 | 66.3 | 68.9 | 65.5 | 55.9 | 50.0 |

NASA 2 Station 12-04 9/12/77 1130

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.31 | 33.74 | 24.96 | 71.0 | 79.2 | 82.0 | 76.4 | 63.6 | 56.5 |
| 5 | 14.86 | 33.72 | 25.04 | 71.5 | 78.9 | 81.2 | 74.4 | 62.7 | 51.9 |
| 10 | 14.66 | 33.74 | 25.10 | 64.7 | 69.1 | 72.2 | 68.1 | 58.9 | 51.7 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 14.09 | 33.75 | 25.22 | 60.2 | 65.5 | 70.6 | 67.4 | 56.2 | 48.4 |
| 20 | 13.11 | 33.76 | 25.44 | 51.0 | 55.7 | 56.9 | 56.9 | 36.9 | 37.2 |
| 25 | 12.76 | 33.70 | 25.45 | 46.4 | 56.6 | 59.6 | 52.8 | 47.0 | 39.6 |
| 30 | 12.39 | 33.71 | 25.54 | 58.6 | 67.7 | 74.0 | 66.5 | 53.9 | 49.3 |
| 35 | 11.89 | 33.73 | 25.64 | 65.5 | 75.7 | 78.5 | 71.6 | 62.4 | 55.1 |
| 40 | 11.46 | 33.73 | 25.72 | 65.8 | 74.7 | 77.8 | 73.6 | 62.4 | 55.6 |
| 45 | 11.34 | 33.76 | 25.77 | 64.5 | 73.9 | 77.0 | 72.6 | 62.7 | 54.1 |
| 50 | 11.28 | 33.73 | 25.76 | 62.5 | 69.8 | 73.8 | 68.4 | 59.5 | 51.9 |
| 55 | 11.27 | 33.75 | 25.78 | 55.2 | 59.5 | 67.0 | 63.9 | 54.8 | 46.5 |
| 60 | 11.19 | 33.71 | 25.76 | 53.5 | 58.8 | 69.1 | 61.7 | 52.6 | 46.2 |
| NASA 2 | Station 12-05 | 9/12/77 | 1245 | | | | | | |
| 1 | 15.44 | 33.77 | 24.96 | 73.0 | 82.3 | 83.6 | 78.2 | 65.1 | 57.6 |
| 5 | 14.83 | 33.76 | 25.08 | 72.7 | 80.5 | 83.3 | 77.4 | 66.6 | 56.2 |
| 10 | 14.41 | 33.73 | 25.15 | 65.8 | 74.2 | 76.5 | 69.1 | 59.4 | 52.2 |
| 15 | 13.80 | 33.84 | 25.29 | 61.0 | 68.5 | 69.5 | 67.5 | 53.9 | 48.9 |
| 20 | 13.03 | 33.67 | 25.38 | 58.1 | 67.6 | 72.9 | 68.7 | 53.0 | 47.9 |
| 25 | 12.01 | 33,74 | 25,63 | 68.1 | 76.0 | 80.7 | 75.2 | 64.0 | 55.7 |
| NASA 2 | Station 12-06 | 9/12/77 | 1400 | | | | | | |
| 1 | 15.33 | 33.75 | 24.96 | 70.8 | 77.2 | 78.6 | 75.5 | 61.3 | 56.6 |
| 5 | 14.91 | 33.73 | 25.09 | 67.3 | 76.0 | 78.1 | 71.9 | 60.0 | 52.2 |
| 10 | 14.24 | 33.66 | 25.12 | 64.8 | 67.5 | 71.1 | 71.2 | 58.9 | 51.1 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 13.16 | 33.75 | 25.41 | 56.3 | 63.3 | 71.3 | 67.4 | 53.3 | 48.2 |
| 20 | 12.30 | 33.73 | 25.57 | 52.4 | 60.2 | 65.8 | 60.4 | 52.7 | 44.2 |
| NASA 2 | Station 12-07 | 9/12/77 | 1505 | | | | | | |
| 1 | 15.46 | 33.76 | 24.94 | 65.0 | 74.4 | 79.4 | 73.1 | 62.5 | 54.8 |
| 5 | 15.37 | 33.75 | 25.95 | 69.6 | 78.9 | 82.5 | 76.4 | 69.6 | 56.5 |
| 10 | 14.10 | 33.71 | 25.19 | 70.2 | 78.3 | 83.4 | 74.8 | 65.7 | 52.5 |
| 15 | 13.15 | 33.80 | 25.44 | 45.6 | 50.8 | 55.9 | 46.3 | 47.0 | 38.7 |
| 20 | 12.65 | 33.74 | 25.51 | 37.9 | 47.6 | 48.7 | 49.8 | 41.6 | 37.6 |
| NASA 2 | Station 12-08 | 9/12/77 | 1545 | | | | | | |
| 1 | 16.08 | 33.76 | 24.80 | 68.7 | 76.1 | 80.5 | 72.9 | 61.6 | 54.3 |
| 5 | 15.25 | 33.56 | 24.83 | 72.2 | 81.4 | 82.6 | 76.6 | 64.8 | 56.7 |
| 10 | 13.99 | 33.69 | 25.20 | 68.7 | 76.7 | 82.5 | 74.5 | 64.0 | 55.1 |
| 15 | 13.11 | 33.79 | 25.46 | 65.1 | 74.8 | 78.8 | 74.2 | 63.7 | 55.6 |
| NASA 2 | Station 12-09 | 9/12/77 | 1610 | | | | | | |
| 1 | 16.29 | 33.77 | 24.76 | 66.7 | 74.2 | 76.2 | 70.1 | 60.1 | 52.1 |
| 5 | 14.99 | 33.77 | 25.05 | 61.2 | 68.9 | 71.1 | 69.3 | 57.7 | 48.9 |
| 10 | 13.83 | 33.73 | 25.26 | 22.8 | 27.9 | 33.1 | 32.6 | 29.3 | 27.5 |

NASA 2 Station 13-01 9/13/77 0850

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.84 | 33.75 | 25.06 | 63.3 | 73.5 | 75.7 | 73.5 | 63.7 | 54.8 |
| 5 | 14.02 | 33.73 | 25.22 | 66.4 | 77.0 | 80.5 | 77.1 | 68.5 | 56.8 |
| 10 | 13.26 | 33.75 | 25.40 | 28.7 | 35.4 | 41.7 | 38.0 | 37.2 | 37.2 |

NASA 2 Station 13-02 9/13/77 0910

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.51 | 33.75 | 24.92 | 61.6 | 70.0 | 74.0 | 69.6 | 60.4 | 52.5 |
| 5 | 15.29 | 33.76 | 24.98 | 64.2 | 72.6 | 76.5 | 72.6 | 61.3 | 54.6 |
| 10 | 14.27 | 33.69 | 25.14 | 69.3 | 77.5 | 80.4 | 76.6 | 65.1 | 56.5 |
| 15 | 13.35 | 33.74 | 25.36 | 62.3 | 74.1 | 79.3 | 71.5 | 60.9 | 52.7 |

NASA 2 Station 13-03B 9/13/77 1015 (Repeat of 13-03)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.23 | 33.74 | 24.97 | 70.7 | 78.5 | 81.0 | 77.4 | 66.4 | 57.5 |
| 5 | 14.90 | 33.73 | 25.04 | 65.8 | 72.7 | 76.9 | 73.6 | 61.8 | 52.4 |
| 10 | 13.31 | 33.76 | 25.39 | 44.5 | 47.0 | 57.0 | 52.4 | 41.2 | 34.0 |
| 15 | 12.91 | 33.77 | 25.48 | 47.5 | 56.6 | 59.8 | 50.6 | 47.3 | 39.0 |
| 20 | 12.60 | 33.69 | 25.48 | 40.6 | 41.9 | 53.7 | 51.1 | 42.7 | 36.0 |

NASA 2 Station 13-04 9/13/77 1050

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.85 | 33.74 | 25.06 | 66.7 | 72.9 | 77.3 | 71.7 | 60.7 | 54.8 |
| 5 | 14.34 | 33.68 | 25.11 | 52.1 | 57.0 | 60.1 | 56.6 | 44.3 | 45.0 |
| 10 | 12.35 | 33.74 | 25.53 | 47.0 | 44.4 | 57.4 | 56.6 | 44.5 | 44.7 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 12.45 | 33.75 | 25.56 | 49.5 | 56.1 | 63.0 | 57.6 | 49.7 | 45.2 |
| 20 | 12.26 | 33.72 | 25.56 | 55.0 | 64.5 | 64.2 | 61.6 | 50.6 | 46.8 |
| 25 | 12.11 | 33.75 | 25.61 | 48.2 | 54.2 | 60.2 | 58.6 | 49.9 | 43.9 |

NASA 2 Station 13-05B 9/13/77 1505 (Repeat of 13-05)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.33 | 33.67 | 25.11 | 45.9 | 51.3 | 51.4 | 49.6 | 43.4 | 39.3 |
| 5 | 14.02 | 33.67 | 25.18 | 47.1 | 51.3 | 55.1 | 53.0 | 44.6 | 41.1 |
| 10 | 13.47 | 33.61 | 25.27 | 45.0 | 53.0 | 56.4 | 51.1 | 46.0 | 41.4 |
| 15 | 13.02 | 33.67 | 25.38 | 51.1 | 56.0 | 62.5 | 57.2 | 48.8 | 49.9 |
| 20 | 12.82 | 33.69 | 25.44 | 55.3 | 62.3 | 66.6 | 62.3 | 50.2 | 49.9 |
| 25 | 12.66 | 33.63 | 25.42 | 61.9 | 67.6 | 71.1 | 70.3 | 58.9 | 53.8 |
| 30 | 12.18 | 33.69 | 25.56 | 70.4 | 76.4 | 80.5 | 76.3 | 64.6 | 57.3 |
| 35 | 12.04 | 33.70 | 25.59 | 72.8 | 80.8 | 85.8 | 79.6 | 67.8 | 60.3 |
| 40 | 11.79 | 33.67 | 25.62 | 75.6 | 82.0 | 86.6 | 79.8 | 67.9 | 58.3 |
| 45 | 11.58 | 33.78 | 25.70 | 79.8 | 86.4 | 90.6 | 83.4 | 72.0 | 61.6 |
| 50 | 11.36 | 33.76 | 25.77 | 81.8 | 90.4 | 90.3 | 87.0 | 72.9 | 62.9 |
| 55 | 11.26 | 33.76 | 25.78 | 76.5 | 83.2 | 85.7 | 80.6 | 70.0 | 60.2 |
| 60 | 11.19 | 33.79 | 25.82 | 70.9 | 79.5 | 84.1 | 78.0 | 67.2 | 57.2 |
| 65 | 11.09 | 33.82 | 25.86 | 71.0 | 78.9 | 82.9 | 78.0 | 66.1 | 57.6 |
| 70 | 10.94 | 33.74 | 25.83 | 43.8 | 48.8 | 53.4 | 50.3 | 43.9 | 39.0 |
| 75 | 10.58 | 33.82 | 25.95 | 38.4 | 44.5 | 48.1 | 47.0 | 41.5 | 37.1 |
| 80 | 10.35 | 33.85 | 26.02 | 34.8 | 39.7 | 44.4 | 47.9 | 37.5 | 33.4 |

NASA 2 Station 13-06 9/13/77 1715

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | o/o Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.35 | 33.66 | 25.10 | 42.8 | 48.0 | 52.4 | 48.4 | 43.1 | 39.9 |
| 5 | 15.19 | 33.62 | 25.10 | 47.3 | 51.4 | 58.5 | 53.5 | 44.5 | 39.6 |
| 10 | 13.26 | 33.69 | 25.35 | 53.5 | 57.3 | 65.2 | 59.4 | 48.2 | 42.2 |
| 15 | 13.05 | 33.65 | 25.36 | 54.0 | 61.4 | 67.0 | 60.5 | 52.0 | 41.2 |
| 20 | 12.10 | 33.73 | 25.61 | 79.0 | 82.6 | 85.5 | 79.9 | 67.9 | 59.9 |
| 25 | 11.70 | 33.72 | 25.68 | 77.9 | 85.4 | 89.5 | 83.0 | 70.3 | 61.5 |
| 30 | 11.57 | 33.73 | 25.69 | 79.5 | 87.4 | 90.8 | 85.0 | 71.5 | 62.4 |
| 35 | 11.45 | 33.72 | 25,72 | 80.5 | 89.1 | 93.0 | 86.3 | 69.0 | 63.4 |
| 40 | 11.32 | 33.73 | 25.75 | 81.9 | 89.8 | 90.9 | 86.3 | 73.8 | 64.5 |
| 45 | 11.28 | 33.75 | 25.77 | 81.9 | 90.7 | 93.2 | 86.9 | 73.8 | 63.5 |
| 50 | 11.19 | 33.80 | 25.83 | 83.2 | 91.1 | 94.0 | 87.6 | 73.5 | 63.4 |
| 55 | 11.14 | 33.75 | 25.80 | 81.6 | 91.7 | 94.3 | 87.2 | 73.8 | 63.2 |
| 60 | 11.08 | 33.76 | 25.82 | 81.8 | 89.9 | 92.7 | 86.9 | 73.6 | 63.8 |
| 65 | 11.07 | 33.76 | 25.82 | 81.7 | 89.9 | 92.7 | 85.6 | 73.8 | 63.1 |
| 70 | 11.00 | 33.76 | 25.83 | 81.5 | 89.7 | 92.9 | 85.7 | 73.0 | 62.4 |
| 75 | 10.94 | 33.76 | 25.84 | 81.3 | 88.8 | 92.7 | 85.4 | 72.3 | 62.9 |
| 80 | 10.90 | 33.77 | 25.86 | 79.6 | 87.6 | 90.9 | 85.0 | 71.8 | 63.1 |
| 85 | 10.73 | 33.76 | 25.88 | 81.2 | 88.8 | 91.4 | 83.0 | 72.6 | 63.2 |
| 90 | 10.44 | 33.77 | 25.94 | 82.1 | 89.7 | 92.4 | 85.7 | 73.2 | 62.9 |

NASA 2 Station 14-01 9/14/77 1020

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.10 | 33.77 | 25.24 | 27.2 | 32.0 | 37.5 | 25.4 | 26.1 | 24.6 |
| 5 | 13.97 | 33.70 | 25.22 | 30.7 | 33.6 | 34.0 | 31.8 | 29.7 | 28.6 |
| 10 | 13.77 | 33.67 | 25.23 | 30.0 | 34.8 | 35.9 | 34.8 | 28.4 | 25.3 |
| 15 | 13.35 | 33.68 | 25.33 | 31.5 | 31.0 | 36.7 | 34.5 | 29.3 | 30.1 |
| 20 | 13.25 | 33.70 | 25.36 | 34.6 | 42.7 | 47.4 | 42.8 | 36.8 | 34.7 |
| 25 | 13.09 | 33.69 | 25.38 | 40.7 | 47.9 | 50.0 | 49.5 | 40.9 | 33.6 |
| 30 | 12.70 | 33.69 | 25.46 | 48.1 | 52.3 | 56.7 | 53.5 | 45.2 | 40.4 |
| 35 | 12.35 | 33.71 | 25.54 | 61.2 | 69.2 | 74.2 | 68.4 | 58.9 | 50.8 |
| 40 | 12.31 | 33.71 | 25.55 | 64.2 | 70.5 | 73.5 | 70.4 | 60.3 | 51.7 |
| 45 | 12.25 | 33.68 | 25.54 | 62.9 | 69.7 | 71.8 | 68.4 | 57.8 | 50.9 |
| 50 | 12.12 | 33.64 | 25.57 | 65.3 | 72.2 | 76.5 | 71.9 | 61.6 | 53.5 |
| 55 | 11.70 | 33.71 | 25.66 | 73.7 | 74.4 | 84.4 | 78.4 | 68.7 | 58.1 |
| 60 | 11.46 | 33.74 | 25.74 | 78.0 | 84.9 | 90.1 | 82.8 | 71.1 | 61.6 |

NASA 2 Station 14-02 9/14/77 1105

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.77 | 33.71 | 25.05 | 43.3 | 50.7 | 47.6 | 43.5 | 38.4 | 34.2 |
| 5 | 14.41 | 33.72 | 25.13 | 38.3 | 43.6 | 47.4 | 47.0 | 38.0 | 32.0 |
| 10 | 14.01 | 33.71 | 25.21 | 46.2 | 52.2 | 50.8 | 48.9 | 43.1 | 38.8 |
| 15 | 13.36 | 33.69 | 25.33 | 54.0 | 58.6 | 63.4 | 61.1 | 52.7 | 50.3 |
| 20 | 13.24 | 33.71 | 25.37 | 62.5 | 71.4 | 75.3 | 74.2 | 60.9 | 52.9 |
| 25 | 12.89 | 33.69 | 25.42 | 57.3 | 71.3 | 79.1 | 72.6 | 60.7 | 55.6 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 12.38 | 33.66 | 25.49 | 60.5 | 69.8 | 79.1 | 70.1 | 61.6 | 55.6 |
| 35 | 12.00 | 33.73 | 25.63 | 73.7 | 82.7 | 87.4 | 82.2 | 69.1 | 59.5 |
| 40 | 11.77 | 33.73 | 25.67 | 71.5 | 81.3 | 85.3 | 79.2 | 66.7 | 59.2 |
| 45 | 11.62 | 33.74 | 25.70 | 68.1 | 76.4 | 82.1 | 77.0 | 66.1 | 57.8 |
| 50 | 11.50 | 33.73 | 25.72 | 72.4 | 81.3 | 85.2 | 80.2 | 68.4 | 59.2 |
| 55 | 11.43 | 33.74 | 25.74 | 75.1 | 83.8 | 85.7 | 81.8 | 89.6 | 59.9 |
| 60 | 11.37 | 33.75 | 25.76 | 69.1 | 76.1 | 80.1 | 76.1 | 65.1 | 56.8 |
| 65 | 11.32 | 33.75 | 25.77 | 70.3 | 77.5 | 82.1 | 75.8 | 65.7 | 57.0 |
| 70 | 11.15 | 33.76 | 25.81 | 65.8 | 72.6 | 78.8 | 73.8 | 63.1 | 55.2 |
| 75 | 10.88 | 33.80 | 25.88 | 58.2 | 65.7 | 69.5 | 65.9 | 57.8 | 50.1 |

NASA 2 Station 14-03 9/14/77 1310

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.79 | 33.70 | 25.04 | 53.2 | 59.5 | 64.2 | 60.0 | 47.0 | 41.5 |
| 5 | 14.24 | 33.73 | 25.17 | 56.9 | 60.0 | 63.9 | 61.8 | 53.5 | 48.4 |
| 10 | 13.78 | 33.68 | 25.23 | 56.5 | 61.4 | 64.3 | 54.9 | 49.9 | 43.8 |
| 15 | 13.15 | 33.65 | 25.34 | 58.6 | 67.6 | 68.7 | 66.5 | 58.9 | 49.3 |
| 20 | 12.35 | 33.73 | 25.56 | 67.3 | 74.5 | 76.7 | 73.4 | 60.3 | 55.2 |
| 25 | 12.08 | 33.72 | 25.60 | 72.9 | 80.5 | 81.3 | 78.9 | 67.3 | 59.1 |
| 30 | 11.96 | 33.72 | 25.62 | 74.3 | 80.7 | 85.0 | 72.9 | 66.4 | 58.7 |
| 35 | 11.69 | 33.72 | 25.68 | 78.6 | 86.6 | 90.3 | 83.8 | 71.5 | 62.1 |
| 40 | 11.56 | 33.75 | 25.72 | 80.7 | 87.7 | 91.6 | 84.9 | 71.2 | 63.4 |
| 45 | 11.53 | 33.73 | 25.71 | 81.2 | 88.9 | 91.4 | 85.0 | 72.4 | 63.5 |
| 50 | 11.33 | 33.74 | 25.75 | 83.1 | 83.5 | 95.3 | 87.6 | 69.6 | 63.4 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 55 | 11.18 | 33.74 | 25.79 | 83.2 | 92.4 | 94.8 | 88.1 | 74.5 | 64.8 |
| 60 | 11.16 | 33.76 | 25.80 | 83.2 | 91.1 | 95.1 | 88.4 | 74.4 | 65.3 |
| 65 | 11.16 | 33.77 | 25.81 | 82.2 | 64.8 | 94.1 | 87.3 | 75.0 | 64.3 |
| 70 | 11.15 | 33.76 | 25.80 | 81.1 | 91.7 | 92.9 | 87.9 | 74.7 | 64.6 |
| 75 | 11.13 | 33.75 | 25.81 | 83.3 | 91.0 | 94.6 | 87.2 | 74.5 | 69.0 |
| 80 | 11.08 | 33.74 | 25.80 | 83.1 | 91.4 | 93.8 | 87.3 | 74.4 | 64.2 |
| 85 | 11.01 | 33.76 | 25.83 | 80.8 | 89.5 | 93.5 | 87.3 | 72.1 | 63.1 |
| 90 | 10.96 | 33.76 | 25.84 | 81.5 | 89.2 | 92.5 | 86.2 | 73.2 | 63.1 |

NASA 2 Station 14-04 9.14/77 1325

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.64 | 33.75 | 25.11 | 66.7 | 73.9 | 76.4 | 71.7 | 69.8 | 53.8 |
| 5 | 14.06 | 33.70 | 25.20 | 66.6 | 71.6 | 75.3 | 71.9 | 65.3 | 55.1 |
| 10 | 13.64 | 33.70 | 25.27 | 62.5 | 72.0 | 73.5 | 71.2 | 64.3 | 54.0 |
| 15 | 13.52 | 33.71 | 25.32 | 61.5 | 71.6 | 72.2 | 69.6 | 58.9 | 53.2 |
| 20 | 12.34 | 33.71 | 25.46 | 63.2 | 67.0 | 71.0 | 70.1 | 60.4 | 52.5 |
| 25 | 12.30 | 33.71 | 25.55 | 64.7 | 74.2 | 79.1 | 73.9 | 62.8 | 52.5 |
| 30 | 12.01 | 33.73 | 25.62 | 73.6 | 83.8 | 85.2 | 79.9 | 73.4 | 59.9 |
| 35 | 11.90 | 33.72 | 25.64 | 77.9 | 84.8 | 90.6 | 83.5 | 71.1 | 62.9 |
| 40 | 11.80 | 33.72 | 25.66 | 77.8 | 87.7 | 87.1 | 83.5 | 71.7 | 62.6 |
| 45 | 11.60 | 33.74 | 25.71 | 80.8 | 89.5 | 90.8 | 85.4 | 71.1 | 62.4 |
| 50 | 11.56 | 33.73 | 25.70 | 81.7 | 89.1 | 91.6 | 86.0 | 73.6 | 62.9 |
| 55 | 11.46 | 33.74 | 25.73 | 79.6 | 88.9 | 93.7 | 86.9 | 73.5 | 62.7 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 60 | 11.39 | 33.73 | 25.74 | 81.7 | 91.0 | 93.5 | 87.2 | 74.1 | 62.9 |
| 65 | 11.24 | 33.77 | 25.79 | 83.3 | 91.1 | 94.5 | 86.5 | 74.5 | 61.5 |
| 70 | 11.19 | 33.79 | 25.82 | 83.6 | 89.5 | 94.5 | 87.5 | 74.5 | 64.6 |
| 75 | 11.14 | 33.77 | 25.82 | 81.5 | 91.4 | 94.0 | 87.8 | 74.1 | 64.3 |
| 80 | 11.09 | 33.76 | 25.82 | 82.8 | 89.5 | 94.0 | 86.7 | 73.6 | 63.5 |
| 85 | 10.70 | 33.74 | 25.87 | 81.6 | 88.5 | 92.4 | 85.7 | 72.6 | 62.7 |
| 90 | 10.59 | 33.74 | 25.89 | 77.6 | 84.7 | 87.1 | 80.9 | 68.8 | 59.5 |

NASA 2 Station 14-05 9/14/77 1600

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.46 | 33.69 | 25.10 | 37.8 | 41.6 | 45.7 | 44.7 | 36.9 | 33.4 |
| 5 | 14.05 | 33.66 | 25.18 | 34.9 | 44.2 | 46.3 | 43.2 | 38.9 | 33.2 |
| 10 | 13.72 | 33.65 | 25.22 | 35.6 | 70.4 | 31.0 | 51.8 | 16.3 | 43.6 |
| 15 | 13.47 | 33.64 | 25.26 | 34.3 | 40.1 | 41.0 | 40.6 | 35.3 | 29.7 |
| 20 | 12.96 | 33.54 | 25.29 | 62.1 | 69.1 | 74.3 | 69.3 | 60.9 | 52.2 |
| 25 | 12.48 | 33.61 | 25.44 | 72.3 | 80.2 | 81.0 | 78.3 | 68.1 | 57.2 |
| 30 | 11.98 | 33.69 | 25.60 | 74.5 | 82.6 | 85.7 | 80.9 | 69.0 | 59.5 |
| 35 | 11.75 | 33.71 | 25.65 | 103.9 | 83.6 | 88.1 | 83.5 | 70.5 | 60.5 |
| 40 | 11.52 | 33.67 | 25.67 | 79.2 | 87.3 | 87.3 | 82.1 | 71.1 | 61.9 |
| 45 | 11.44 | 33.74 | 25.74 | 105.0 | 81.4 | 89.0 | 82.2 | 69.9 | 60.0 |
| 50 | 11.36 | 33.76 | 25.77 | 75.3 | 82.3 | 82.9 | 77.9 | 66.0 | 57.0 |
| 55 | 11.38 | 33.77 | 25.77 | 64.1 | 69.5 | 75.3 | 69.9 | 58.4 | 54.0 |
| 60 | 11.29 | 33.75 | 25.77 | 59.0 | 68.3 | 72.6 | 67.8 | 59.7 | 51.3 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 65 | 11.19 | 33.74 | 25.78 | 61.3 | 68.3 | 71.4 | 68.8 | 58.6 | 51.3 |
| 70 | 10.81 | 33.79 | 25.89 | 53.8 | 61.0 | 65.0 | 61.6 | 53.5 | 47.9 |
| 75 | 10.75 | 33.79 | 25.90 | 49.8 | 55.5 | 59.3 | 57.2 | 49.7 | 44.7 |
| 80 | 10.60 | 33.81 | 25.95 | 46.7 | 52.9 | 57.0 | 55.6 | 48.2 | 43.4 |
| NASA 2 | Station 14-06 | 9/14/77 | 1640 | | | | | | |
| 1 | 15.57 | 33.74 | 24.89 | 62.0 | 69.8 | 73.0 | 68.1 | 55.0 | 47.9 |
| 5 | 15.57 | 33.73 | 24.89 | 63.1 | 70.7 | 71.8 | 66.2 | 55.9 | 48.9 |
| 10 | 14.24 | 33.66 | 25.13 | 51.3 | 60.1 | 63.1 | 58.1 | 41.3 | 39.6 |
| 15 | 13.18 | 33.75 | 25.41 | 48.8 | 54.7 | 50.6 | 52.2 | 36.6 | 40.1 |
| 20 | 12.80 | 33.71 | 25.45 | 55.5 | 64.4 | 63.9 | 63.6 | 55.3 | 50.8 |
| 25 | 12.54 | 33.71 | 25.50 | 63.5 | 72.7 | 73.4 | 70.0 | 65.2 | 56.7 |
| 30 | 12.05 | 33.65 | 25.56 | 79.8 | 87.7 | 91.9 | 85.4 | 72.6 | 62.4 |
| 35 | 11.73 | 33.75 | 25.69 | 77.6 | 81.9 | 95.3 | 87.2 | 73.0 | 62.4 |
| 40 | 11.49 | 33.69 | 25.69 | 73.0 | 80.5 | 85.0 | 80.9 | 68.1 | 60.0 |
| 45 | 11.24 | 33.75 | 25.78 | 66.2 | 73.3 | 78.1 | 73.2 | 62.4 | 54.8 |
| 50 | 11.22 | 33.76 | 25.79 | 59.9 | 68.3 | 73.0 | 68.8 | 59.7 | 51.9 |
| 55 | 11.22 | 33.74 | 25.78 | 59.6 | 66.0 | 70.3 | 67.1 | 57.8 | 50.1 |
| 60 | 11.20 | 33.76 | 25.79 | 58.5 | 68.0 | 70.3 | 67.4 | 58.1 | 51.4 |
| NASA 2 | Station 15-01 | 9/15/77 | 0930 | | | | | | |
| 1 | 14.44 | 33.69 | 25.10 | 32.1 | 38.6 | 42.2 | 34.9 | 33.2 | 28.8 |
| 5 | 14.26 | 33.65 | 25.11 | 31.5 | 40.4 | 35.9 | 29.2 | 28.7 | 26.4 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 13.63 | 33.61 | 25.21 | 37.4 | 44.4 | 45.7 | 42.6 | 42.5 | 36.8 |
| 15 | 12.88 | 33.66 | 25.40 | 62.7 | 70.4 | 68.7 | 71.7 | 59.7 | 51.6 |
| 20 | 12.47 | 33.71 | 25.52 | 66.6 | 76.1 | 79.9 | 73.5 | 69.2 | 55.7 |
| 25 | 12.43 | 33.70 | 25.52 | 70.8 | 77.6 | 81.7 | 76.8 | 67.3 | 58.0 |
| 30 | 12.32 | 33.70 | 25.54 | 72.6 | 80.0 | 80.5 | 77.4 | 67.6 | 59.5 |
| 35 | 12.09 | 33.69 | 25.58 | 75.9 | 84.7 | 88.5 | 80.9 | 69.9 | 60.2 |
| 40 | 11.94 | 33.69 | 25.60 | 77.0 | 84.4 | 88.4 | 82.8 | 69.0 | 60.5 |
| 45 | 11.80 | 33.70 | 25.64 | 78.0 | 81.1 | 90.6 | 83.0 | 69.3 | 61.3 |
| 50 | 11.67 | 33.73 | 25.69 | 79.4 | 86.9 | 91.9 | 82.7 | 71.8 | 63.1 |
| 55 | 11.53 | 33.73 | 25.71 | 82.0 | 84.9 | 99.1 | 87.2 | 73.8 | 63.5 |
| 60 | 11.34 | 33.74 | 25.75 | 83.8 | 91.9 | 94.9 | 87.9 | 74.1 | 64.2 |
| 65 | 11.30 | 33.76 | 25.78 | 83.7 | 90.8 | 95.1 | 88.2 | 74.8 | 64.5 |
| 70 | 11.21 | 33.74 | 25.78 | 83.5 | 92.0 | 94.5 | 87.6 | 75.4 | 64.3 |
| 75 | 11.20 | 33.75 | 25.78 | 83.2 | 91.3 | 95.6 | 88.1 | 74.7 | 61.5 |
| 80 | 11.20 | 33.74 | 25.78 | 83.1 | 91.7 | 92.5 | 87.3 | 74.8 | 64.6 |
| 85 | 11.18 | 33.74 | 25.79 | 82.8 | 91.4 | 94.8 | 87.8 | 74.4 | 65.1 |
| 90 | 11.11 | 33.76 | 25.81 | 83.2 | 91.1 | 94.0 | 81.8 | 74.8 | 64.0 |

NASA 2 Station 15-02 9/15/77 1020

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.21 | 33.70 | 25.16 | 43.4 | 50.1 | 54.3 | 50.3 | 44.9 | 34.7 |
| 5 | 14.12 | 33.68 | 25.17 | 46.1 | 54.2 | 57.4 | 56.3 | 47.9 | 37.6 |
| 10 | 14.08 | 33.69 | 25.18 | 37.3 | 45.0 | 41.0 | 48.4 | 29.7 | 37.2 |
| 15 | 13.92 | 33.67 | 25.19 | 47.6 | 50.8 | 45.7 | 54.0 | 50.8 | 46.5 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 13.72 | 33.68 | 25.25 | 56.4 | 65.8 | 67.6 | 64.3 | 52.1 | 50.5 |
| 25 | 13.45 | 33.61 | 25.25 | 56.4 | 62.3 | 65.4 | 63.3 | 52.9 | 47.1 |
| 30 | 12.63 | 33.67 | 25.46 | 61.6 | 67.2 | 72.9 | 67.8 | 56.8 | 47.9 |
| 35 | 12.36 | 33.69 | 25.52 | 65.1 | 70.5 | 75.0 | 70.6 | 59.7 | 53.6 |
| 40 | 12.19 | 33.70 | 25.56 | 68.7 | 78.2 | 81.8 | 75.4 | 65.1 | 57.3 |
| 45 | 12.01 | 33.70 | 25.60 | 73.0 | 80.0 | 81.8 | 75.5 | 67.5 | 56.4 |
| 50 | 11.91 | 33.70 | 25.62 | 78.6 | 84.2 | 90.9 | 80.2 | 70.5 | 60.0 |
| 55 | 11.83 | 33.69 | 25.62 | 78.6 | 86.1 | 91.6 | 84.4 | 72.0 | 63.2 |
| 60 | 11.68 | 33.20 | 25.66 | 81.8 | 88.8 | 92.2 | 86.0 | 71.5 | 62.9 |
| 65 | 11.53 | 33.71 | 25.70 | 82.7 | 89.7 | 95.4 | 87.2 | 73.6 | 63.2 |
| 70 | 11.41 | 33.72 | 25.73 | 82.9 | 91.3 | 95.1 | 88.1 | 74.5 | 64.3 |
| 75 | 11.38 | 33.72 | 25.74 | 83.2 | 91.9 | 94.8 | 87.6 | 73.9 | 69.6 |
| 80 | 11.24 | 33.72 | 25.76 | 83.3 | 91.7 | 99.1 | 86.5 | 73.8 | 63.5 |
| 85 | 11.14 | 33.73 | 25.79 | 83.3 | 91.0 | 94.9 | 88.4 | 74.2 | 64.3 |
| 90 | 10.95 | 33.72 | 25.81 | 81.8 | 88.5 | 91.1 | 83.4 | 71.7 | 62.3 |

NASA 2 Station 15-03 9/15/77 1105

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.63 | 33.71 | 25.08 | 39.5 | 44.1 | 46.8 | 46.7 | 36.0 | 34.2 |
| 5 | 14.50 | 33.67 | 25.08 | 35.1 | 45.1 | 43.9 | 39.7 | 34.2 | 35.8 |
| 10 | 13.99 | 33.69 | 25.20 | 36.4 | 43.5 | 48.6 | 43.6 | 41.2 | 33.4 |
| 15 | 13.51 | 33.66 | 25.27 | 39.6 | 41.7 | 45.5 | 47.0 | 39.3 | 28.1 |
| 20 | 13.03 | 33.70 | 25.40 | 51.0 | 56.4 | 64.6 | 59.5 | 53.6 | 46.0 |
| 25 | 12.89 | 33.69 | 25.42 | 53.8 | 59.2 | 60.7 | 59.4 | 51.8 | 46.0 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 12.66 | 33.70 | 25.48 | 54.4 | 67.5 | 67.1 | 61.7 | 55.4 | 46.3 |
| 35 | 12.46 | 33.69 | 25.50 | 62.9 | 70.5 | 73.2 | 69.0 | 58.6 | 50.8 |
| 40 | 12.21 | 33.72 | 25.57 | 66.1 | 76.0 | 75.6 | 75.0 | 63.9 | 53.0 |
| 45 | 12.01 | 33.72 | 25.62 | 68.5 | 78.2 | 80.1 | 75.5 | 66.3 | 57.0 |
| 50 | 11.90 | 33.72 | 25.64 | 70.4 | 80.0 | 83.9 | 78.0 | 67.9 | 56.7 |
| 55 | 11.70 | 33.73 | 25.68 | 68.2 | 77.9 | 82.8 | 78.3 | 64.8 | 57.6 |
| 60 | 11.50 | 33.75 | 25.73 | 65.5 | 75.8 | 79.3 | 75.7 | 64.9 | 55.7 |
| 65 | 11.30 | 33.75 | 25.76 | 67.6 | 74.7 | 79.6 | 74.7 | 62.8 | 54.9 |
| 70 | 11.06 | 33.77 | 25.82 | 64.2 | 72.3 | 75.3 | 71.2 | 61.3 | 53.8 |
| 75 | 10.78 | 33.80 | 25.90 | 62.9 | 70.7 | 74.5 | 70.6 | 60.0 | 52.9 |
| 80 | 10.46 | 33.81 | 25.97 | 53.1 | 58.8 | 63.0 | 62.0 | 52.0 | 46.2 |

NASA 2 Station 15-04 9/15/77 1210

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.44 | 33.75 | 24.93 | 59.5 | 70.8 | 73.4 | 68.8 | 58.3 | 49.8 |
| 5 | 15.17 | 33.73 | 24.98 | 59.5 | 65.7 | 63.8 | 64.2 | 54.5 | 46.8 |
| 10 | 14.72 | 33.78 | 25.11 | 52.1 | 63.8 | 64.2 | 62.4 | 55.3 | 44.9 |
| 15 | 13.42 | 33.71 | 25.33 | 52.1 | 60.4 | 65.7 | 54.0 | 47.3 | 37.7 |
| 20 | 12.56 | 33.74 | 25.52 | 68.1 | 78.8 | 85.5 | 76.6 | 65.5 | 59.2 |
| 25 | 12.34 | 33.71 | 25.54 | 74.9 | 81.9 | 91.4 | 80.8 | 69.9 | 58.4 |
| 30 | 11.91 | 33.70 | 25.61 | 79.2 | 88.3 | 93.2 | 85.7 | 73.8 | 64.5 |
| 35 | 11.70 | 33.74 | 25.68 | 81.1 | 90.4 | 91.1 | 87.2 | 73.9 | 63.2 |
| 40 | 11.60 | 33.73 | 25.70 | 80.8 | 89.7 | 91.7 | 86.0 | 73.0 | 64.0 |
| 45 | 11.44 | 33.74 | 25.74 | 78.5 | 86.1 | 90.1 | 83.0 | 71.2 | 60.3 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | o/o Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 11.43 | 33.72 | 25.73 | 75.3 | 82.9 | 87.1 | 81.7 | 69.0 | 60.8 |
| 55 | 11.45 | 33.74 | 25.74 | 73.3 | 80.7 | 82.9 | 77.6 | 66.6 | 56.2 |
| 60 | 11.44 | 33.72 | 25.72 | 61.9 | 69.1 | 72.7 | 68.1 | 58.8 | 50.8 |
| 65 | 11.35 | 33.73 | 25.75 | 55.5 | 62.3 | 66.5 | 62.7 | 54.2 | 47.8 |
| 70 | 11.22 | 33.75 | 25.79 | 55.7 | 63.0 | 66.8 | 64.3 | 54.2 | 48.1 |
| NASA 2 | Station 15-05 | 9/15/77 | 1325 | | | | | | |
| 1 | 15.39 | 33.83 | 25.00 | 66.6 | 74.7 | 76.1 | 72.9 | 59.4 | 54.4 |
| 5 | 15.13 | 33.71 | 24.97 | 62.5 | 68.8 | 70.0 | 64.2 | 54.4 | 42.2 |
| 10 | 14.94 | 33.71 | 25.02 | 58.1 | 62.2 | 65.8 | 62.0 | 50.6 | 45.7 |
| 15 | 13.59 | 33.67 | 25.26 | 45.8 | 52.2 | 57.7 | 55.6 | 49.0 | 38.3 |
| 20 | 12.65 | 33.71 | 25.49 | 54.4 | 58.8 | 59.6 | 58.5 | 55.6 | 45.4 |
| 25 | 12.32 | 33.70 | 25.54 | 63.2 | 73.0 | 78.8 | 71.9 | 63.4 | 56.4 |
| 30 | 12.70 | 33.71 | 25.57 | 56.1 | 64.2 | 69.4 | 64.5 | 54.2 | 46.3 |
| NASA 2 | Station 15-06 | 9/15/77 | 1420 | | | | | | |
| 1 | 15.56 | 33.69 | 24.86 | 61.2 | 69.4 | 75.7 | 69.3 | 58.6 | 52.5 |
| 5 | 15.37 | 33.66 | 24.88 | 60.7 | 67.7 | 72.9 | 68.5 | 50.2 | 47.6 |
| 10 | 14.88 | 33.72 | 25.03 | 58.4 | 62.5 | 68.4 | 63.2 | 52.3 | 48.4 |
| 15 | 13.54 | 33.61 | 25.23 | 43.7 | 53.5 | 56.2 | 58.2 | 47.2 | 41.4 |
| 20 | 12.79 | 33.70 | 25.45 | 52.6 | 62.9 | 59.9 | 61.3 | 52.7 | 44.6 |
| 25 | 12.66 | 33.71 | 25.49 | 51.4 | 53.3 | 55.3 | 57.5 | 51.2 | 44.9 |

NASA 2 Station 15-07 9/15/77 1515

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.69 | 33.73 | 24.86 | 64.5 | 72.3 | 74.6 | 70.0 | 57.1 | 51.3 |
| 5 | 15.22 | 33.72 | 25.96 | 64.8 | 67.9 | 74.2 | 66.8 | 57.2 | 52.1 |
| 10 | 14.82 | 33.74 | 25.06 | 62.5 | 68.5 | 67.0 | 64.8 | 53.9 | 49.5 |
| 15 | 13.43 | 33.68 | 25.31 | 46.1 | 49.8 | 53.8 | 50.8 | 44.0 | 34.8 |
| 20 | 13.14 | 33.79 | 25.45 | 50.6 | 58.3 | 62.3 | 59.1 | 51.2 | 48.7 |

NASA 2 Station 15-08 9/15/77 1600

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.66 | 33.75 | 24.88 | 69.8 | 76.7 | 81.7 | 74.7 | 63.1 | 54.4 |
| 5 | 15.40 | 33.71 | 24.92 | 68.8 | 76.6 | 78.5 | 70.9 | 61.9 | 54.6 |
| 10 | 14.49 | 33.66 | 25.07 | 64.0 | 73.0 | 76.7 | 71.2 | 57.2 | 50.3 |
| 15 | 13.80 | 33.72 | 25.26 | 51.7 | 60.1 | 62.8 | 60.5 | 49.9 | 44.4 |
| 20 | 13.29 | 33.73 | 25.37 | 21.4 | 27.2 | 28.4 | 32.1 | 25.7 | 22.9 |

NASA 2 Station 16-01 9/16/77 0840

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.42 | 33.74 | 24.93 | 62.6 | 69.2 | 74.0 | 68.8 | 59.5 | 51.4 |
| 5 | 15.41 | 33.73 | 24.93 | 61.1 | 68.6 | 75.0 | 69.0 | 58.4 | 51.1 |
| 10 | 13.84 | 33.64 | 25.20 | 44.8 | 51.4 | 51.3 | 49.2 | 47.0 | 35.3 |
| 15 | 13.43 | 33.72 | 25.34 | 33.3 | 40.4 | 49.5 | 42.9 | 38.0 | 34.7 |
| 20 | 13.39 | 33.71 | 25.34 | 30.7 | 37.7 | 40.6 | 41.5 | 32.9 | 30.7 |

NASA 2 Station 16-02 9/16/77 0915

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.14 | 33.71 | 25.97 | 66.6 | 74.1 | 75.6 | 69.0 | 61.2 | 51.4 |
| 5 | 15.10 | 33.71 | 24.97 | 65.6 | 72.3 | 76.1 | 71.9 | 56.8 | 56.8 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 14.45 | 33.68 | 25.09 | 51.9 | 54.2 | 57.8 | 54.7 | 46.9 | 40.3 |
| 15 | 14.06 | 33.66 | 25.15 | 45.9 | 52.6 | 56.2 | 55.9 | 48.2 | 41.7 |
| 20 | 13.12 | 33.75 | 25.42 | 53.0 | 63.3 | 66.6 | 60.0 | 50.6 | 43.0 |
| NASA 2 | Station 16-03 | 9/16/77 | 0940 | | | | | | |
| 1 | 14.76 | 33.72 | 25.06 | 53.5 | 57.9 | 61.2 | 60.1 | 49.7 | 45.2 |
| 5 | 14.68 | 33.66 | 25.03 | 50.3 | 58.5 | 62.5 | 58.8 | 51.4 | 44.6 |
| 10 | 14.01 | 33.58 | 25.11 | 52.3 | 56.9 | 64.6 | 58.5 | 53.9 | 42.2 |
| 15 | 13.15 | 33.72 | 25.39 | 54.1 | 61.4 | 62.3 | 56.2 | 51.8 | 47.9 |
| 20 | 12.99 | 33.69 | 25.40 | 56.3 | 66.7 | 70.6 | 68.7 | 55.0 | 48.7 |
| 25 | 12.85 | 33.70 | 25.43 | 53.9 | 61.0 | 64.7 | 63.3 | 52.0 | 40.3 |
| NASA 2 | Station 16-04 | 9/16/77 | 1005 | | | | | | |
| 1 | 14.53 | 33.69 | 25.09 | 50.1 | 55.8 | 58.8 | 56.9 | 48.1 | 40.7 |
| 5 | 14.49 | 33.69 | 25.09 | 48.2 | 51.9 | 53.1 | 56.3 | 41.3 | 40.1 |
| 10 | 13.97 | 33.58 | 25.11 | 44.4 | 56.6 | 55.4 | 57.3 | 50.5 | 40.9 |
| 15 | 13.09 | 33.68 | 25.37 | 57.1 | 63.9 | 64.1 | 65.9 | 49.4 | 48.2 |
| 20 | 12.39 | 33.69 | 25.52 | 61.7 | 68.6 | 74.0 | 65.6 | 58.4 | 50.9 |
| 25 | 12.33 | 33.69 | 25.53 | 59.4 | 65.4 | 69.2 | 66.4 | 57.7 | 50.3 |
| 30 | 12.32 | 33.68 | 25.53 | 58.2 | 66.9 | 70.8 | 67.2 | 58.0 | 49.3 |

NASA 2 Station 16-05 9/16/77 1040

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 15.08 | 33.70 | 24.98 | 58.5 | 69.7 | 71.3 | 65.5 | 54.1 | 46.8 |
| 5 | 14.94 | 33.70 | 25.00 | 58.1 | 67.2 | 65.2 | 62.1 | 53.0 | 42.3 |
| 10 | 14.65 | 33.71 | 25.07 | 46.4 | 58.9 | 53.2 | 60.2 | 51.4 | 39.9 |
| 15 | 14.50 | 33.68 | 25.08 | 51.6 | 51.0 | 62.6 | 59.8 | 49.9 | 36.0 |
| 20 | 14.02 | 33.69 | 25.19 | 46.5 | 52.6 | 75.4 | 58.6 | 44.2 | 44.4 |
| 25 | 13.28 | 33.66 | 25.33 | 52.2 | 60.5 | 66.9 | 66.5 | 55.7 | 49.5 |
| 30 | 12.48 | 33.57 | 25.41 | 72.5 | 82.7 | 86.8 | 80.5 | 66.4 | 54.5 |
| 35 | 12.00 | 33.68 | 25.59 | 70.3 | 76.6 | 81.3 | 76.3 | 65.5 | 57.3 |
| 40 | 11.80 | 33.70 | 25.64 | 70.1 | 80.1 | 83.4 | 75.7 | 66.9 | 57.6 |
| 45 | 11.71 | 33.71 | 25.66 | 64.8 | 71.7 | 75.9 | 72.3 | 61.0 | 52.4 |
| 50 | 11.60 | 33.70 | 25.67 | 62.0 | 70.4 | 75.4 | 71.5 | 60.3 | 52.5 |
| 55 | 11.32 | 33.73 | 25.75 | 56.9 | 63.3 | 66.6 | 64.6 | 55.7 | 48.9 |
| 60 | 11.23 | 33.75 | 25.78 | 55.4 | 61.6 | 65.4 | 61.1 | 52.9 | 46.2 |
| 65 | 11.12 | 33.76 | 25.81 | 56.7 | 62.7 | 65.0 | 62.7 | 54.4 | 49.7 |

NASA 2 Station 16-06 9/16/77 1145

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.85 | 33.69 | 25.01 | 44.7 | 49.7 | 53.2 | 52.8 | 42.8 | 41.2 |
| 5 | 14.80 | 33.70 | 25.03 | 46.6 | 50.1 | 53.7 | 47.3 | 41.2 | 38.8 |
| 10 | 14.79 | 33.71 | 25.05 | 44.6 | 47.9 | 53.7 | 51.7 | 45.2 | 37.6 |
| 15 | 14.68 | 33.67 | 25.04 | 43.0 | 48.5 | 50.2 | 48.3 | 43.7 | 39.8 |
| 20 | 14.25 | 33.68 | 25.14 | 48.7 | 50.4 | 59.6 | 52.7 | 44.0 | 38.8 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 13.32 | 33.60 | 25.28 | 50.3 | 61.0 | 66.0 | 64.3 | 61.0 | 50.5 |
| 30 | 12.84 | 33.68 | 25.43 | 61.5 | 69.5 | 70.6 | 73.6 | 61.6 | 54.8 |
| 35 | 12.27 | 33.68 | 25.53 | 71.2 | 77.2 | 85.3 | 76.6 | 69.0 | 60.2 |
| 40 | 12.18 | 33.72 | 25.58 | 99.3 | 81.9 | 86.3 | 80.6 | 67.6 | 59.2 |
| 45 | 12.00 | 33.70 | 25.60 | 73.3 | 82.2 | 85.3 | 80.5 | 70.5 | 60.3 |
| 50 | 11.91 | 33.70 | 25.62 | 76.8 | 83.6 | 89.5 | 82.1 | 69.7 | 63.2 |
| 55 | 11.69 | 33.71 | 25.67 | 75.7 | 85.7 | 91.1 | 84.1 | 69.3 | 61.9 |
| 60 | 11.42 | 33.70 | 25.71 | 80.7 | 88.8 | 92.9 | 86.3 | 73.2 | 64.6 |
| 65 | 11.27 | 33.72 | 25.75 | 79.9 | 88.6 | 91.6 | 84.1 | 76.8 | 62.3 |
| 70 | 11.18 | 33.71 | 25.76 | 75.7 | 84.1 | 88.1 | 83.0 | 67.2 | 80.3 |
| 75 | 10.97 | 33.73 | 25.82 | 71.0 | 77.5 | 81.2 | 76.7 | 65.7 | 58.0 |
| 80 | 10.66 | 33.78 | 25.91 | 52.8 | 64.6 | 63.3 | 60.7 | 52.0 | 46.8 |

NASA 2 Station 16-07 9/16/77 1250

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 14.92 | 33.66 | 24.98 | 56.2 | 60.5 | 64.6 | 59.2 | 52.3 | 46.2 |
| 5 | 14.57 | 33.67 | 25.08 | 52.0 | 57.5 | 59.6 | 53.3 | 44.9 | 42.2 |
| 10 | 13.66 | 33.70 | 25.27 | 46.6 | 52.5 | 53.4 | 52.4 | 42.7 | 36.9 |
| 15 | 12.98 | 33.66 | 25.38 | 60.5 | 68.3 | 74.8 | 67.7 | 58.7 | 51.6 |
| 20 | 12.59 | 33.67 | 25.47 | 65.4 | 73.8 | 75.0 | 72.8 | 62.2 | 49.7 |
| 25 | 12.45 | 33.69 | 25.50 | 67.6 | 77.7 | 78.0 | 76.3 | 52.4 | 58.1 |
| 30 | 12.20 | 33.67 | 25.54 | 73.7 | 80.8 | 86.0 | 79.0 | 68.2 | 56.0 |
| 35 | 12.04 | 33.71 | 25.60 | 78.6 | 84.9 | 90.8 | 83.8 | 70.6 | 57.5 |
| 40 | 11.92 | 33.70 | 25.62 | 78.0 | 88.9 | 90.6 | 85.9 | 68.2 | 62.3 |

| Depth (meters) | Temp. °C | Salinity o/oo | Sigma-t | % Transmission 400 nm | 450 nm | 500 nm | 550 nm | 600 nm | 650 nm |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 11.84 | 33.68 | 25.61 | 81.7 | 89.1 | 92.2 | 86.7 | 73.2 | 62.1 |
| 50 | 11.72 | 33.68 | 25.64 | 82.3 | 90.2 | 91.1 | 86.3 | 73.2 | 62.6 |
| 55 | 11.70 | 33.69 | 25.65 | 82.5 | 91.0 | 94.1 | 87.3 | 73.0 | 63.4 |
| 60 | 11.70 | 33.69 | 25.65 | 80.9 | 89.2 | 91.4 | 86.9 | 72.7 | 63.5 |
| 65 | 11.59 | 33.70 | 25.68 | 81.5 | 89.5 | 90.8 | 85.1 | 72.3 | 62.6 |
| 70 | 11.54 | 33.70 | 25.69 | 80.9 | 88.3 | 90.4 | 84.3 | 71.8 | 62.1 |
| 75 | 11.46 | 33.74 | 25.73 | 77.5 | 83.2 | 89.8 | 84.1 | 70.3 | 61.6 |
| 80 | 11.22 | 33.72 | 25.76 | 71.9 | 80.5 | 81.8 | 79.2 | 67.8 | 59.5 |
| 85 | 11.07 | 33.73 | 25.80 | 76.7 | 83.9 | 87.4 | 81.8 | 67.2 | 60.2 |
| 90 | 10.81 | 33.75 | 25.85 | 71.5 | 78.6 | 82.0 | 76.8 | 65.8 | 56.7 |