Marine Pigments, Productivity, And Associated Chemistry
Data Dictionary

This File: AAAREADME.TXT, AAAREADME.PS
Release: 4.0
Date: 24-Feb-1994

Machine: PHYTO.RSMAS.MIAMI.EDU (129.171.101.49)
Directory: [ANONYMOUS.BALCHDATA.REL04]

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1 INTRODUCTION

This data format is designed for archiving phytoplankton pigment and productivity data as part of the Joint Global Ocean Flux Study (JGOFS). The data are stored in 15 different digital records types.

The software was written by Dr. William Balch and Mr. Charles Byrne, as part of an ongoing NASA effort to relate in-situ and satellite observations.

IMPORTANT NOTE

This release includes ALL files that were included in previous releases, in addition to completely new files.

2 CHANGES FOR RELEASE 4.0

2.1 File List

The following are files which have been previously released but some corrections have been made. The versions in this release supercede any previously released versions.

CAL8401.DAT;1	238	22-FEB-1995 12:11:26.84
CAL9202.DAT;1	111	22-FEB-1995 12:11:50.28
CAL9204.DAT;1	113	22-FEB-1995 12:11:50.93
CUEA0376.DAT;1	710	22-FEB-1995 12:11:57.92
CUEA0377.DAT;1	1822	22-FEB-1995 12:12:00.91
CUEA108.DAT;1	835	22-FEB-1995 12:12:08.31
HOTEC1.DAT;1	41	22-FEB-1995 12:12:56.18
HOTEC2.DAT;1	33	22-FEB-1995 12:12:56.57
NEWNODC1.DAT;1	14671	22-FEB-1995 12:13:18.23
NEWNODC2.DAT;1	7673	22-FEB-1995 12:14:25.26

Total of 10 files, 26247 blocks.

2.2 New Files

The following are data files which are completely new with this release:

ANTIPRO1.DAT;1	147	22-FEB-1995 12:16:18.11
CHLOMAX.DAT;1	88	22-FEB-1995 12:16:19.00
CINECA2.DAT;1	99	22-FEB-1995 12:16:19.60
CINECA5.DAT;1	126	22-FEB-1995 12:16:20.24
DISC_IS.DAT;1	101	22-FEB-1995 12:16:20.96
DISC_SIS.DAT;1	60	22-FEB-1995 12:16:21.60
EMERAUDE3.DAT;1	34	22-FEB-1995 12:16:22.05
GUIDOME.DAT;1	62	22-FEB-1995 12:16:22.47
JOINT1.DAT;1	126	22-FEB-1995 12:16:22.92
JOINT2.DAT;1	508	22-FEB-1995 12:16:23.59
MED1_SIS.DAT;1	531	22-FEB-1995 12:16:25.66
MEDIPRO3.DAT;1	149	22-FEB-1995 12:16:27.82
MEDIPRO6.DAT;1	92	22-FEB-1995 12:16:28.62
MED_IS.DAT;1	50	22-FEB-1995 12:16:29.22
PACIPROD.DAT;1	83	22-FEB-1995 12:16:29.66
RCA.DAT;1	37	22-FEB-1995 12:16:30.25

Total of 16 files, 2293 blocks.

3 COMPLETE FILE LISTING FOR RELEASE 4.0

In addition to the two AAAREADME files (text and postscript), the following data files are included with this release:

ANTIPRO1.DAT;1	147	22-FEB-1995	12:16:18.11
ATL.DAT;1	293	22-FEB-1995	12:11:17.50
BBS.DAT;1	758	22-FEB-1995	12:11:19.02
BIOWATT.DAT;1	63	22-FEB-1995	12:11:22.37
CABS3.DAT;1	18	22-FEB-1995	12:11:22.84
CABS4.DAT;1	28	22-FEB-1995	12:11:23.20
CABS5.DAT;1	28	22-FEB-1995	12:11:23.52
CABS7.DAT;1	28	22-FEB-1995	12:11:23.87
CAL8105.DAT;1	432	22-FEB-1995	12:11:24.28
CAL8401.DAT;1	238	22-FEB-1995	12:11:26.84
CAL8402-3.DAT;1	422	22-FEB-1995	12:11:28.06
CAL8404.DAT;1	221	22-FEB-1995	12:11:29.91
CAL8405.DAT;1	101	22-FEB-1995	12:11:30.99
CAL8406.DAT;1	127	22-FEB-1995	12:11:31.68
CAL8407.DAT;1	225	22-FEB-1995	12:11:32.48
CAL8410.DAT;1	212	22-FEB-1995	12:11:33.65
CAL8502.DAT;1	81	22-FEB-1995	12:11:34.79
CAL8505.DAT;1	127	22-FEB-1995	12:11:35.38
CAL8508.DAT;1	98	22-FEB-1995	12:11:36.12
CAL8511.DAT;1	84	22-FEB-1995	12:11:36.79
CAL8602.DAT;1	92	22-FEB-1995	12:11:37.40
CAL8603.DAT;1	41	22-FEB-1995	12:11:38.14
CAL8605.DAT;1	89	22-FEB-1995	12:11:38.56
CAL8609.DAT;1	113	22-FEB-1995	12:11:39.17
CAL8611.DAT;1	105	22-FEB-1995	12:11:39.88
CAL8703.DAT;1	97	22-FEB-1995	12:11:40.62
CAL8705.DAT;1	98	22-FEB-1995	12:11:41.29
CAL8709.DAT;1	98	22-FEB-1995	12:11:42.06
CAL8711.DAT;1	104	22-FEB-1995	12:11:42.77
CAL8901.DAT;1	103	22-FEB-1995	12:11:43.47
CAL8904.DAT;1	95	22-FEB-1995	12:11:44.17
CAL8907.DAT;1	108	22-FEB-1995	12:11:44.79
CAL8911.DAT;1	95	22-FEB-1995	12:11:45.45
CAL9003.DAT;1	98	22-FEB-1995	12:11:46.10
CAL9004.DAT;1	81	22-FEB-1995	12:11:46.76
CAL9007.DAT;1	94	22-FEB-1995	12:11:47.34
CAL9011.DAT;1	103	22-FEB-1995	12:11:48.01
CAL9101.DAT;1	104	22-FEB-1995	12:11:48.93
CAL9103.DAT;1	88	22-FEB-1995	12:11:49.60
CAL9202.DAT;1	111	22-FEB-1995	12:11:50.28
CAL9204.DAT;1	113	22-FEB-1995	12:11:50.93
CALSQ87.DAT;1	112	22-FEB-1995	12:11:51.62
CAPEC.DAT;1	230	22-FEB-1995	12:11:52.33
CF88.DAT;1	133	22-FEB-1995	12:11:53.62
CHLOMAX.DAT;1	88	22-FEB-1995	12:16:19.00
CINECA2.DAT;1	99	22-FEB-1995	12:16:19.60
CINECA5.DAT;1	126	22-FEB-1995	12:16:20.24
CLIMAXI.DAT;1	40	22-FEB-1995	12:11:54.41
CLIMAXII.DAT;1	732	22-FEB-1995	12:11:54.83
CUEA0376.DAT;1	710	22-FEB-1995	12:11:57.92
CUEA0377.DAT;1	1822	22-FEB-1995	12:12:00.91

CUEA108.DAT;1	835	22-FEB-1995	12:12:08.31
CUEA82.DAT;1	949	22-FEB-1995	12:12:12.34
DISC_IS.DAT;1	101	22-FEB-1995	12:16:20.96
DISC_SIS.DAT;1	60	22-FEB-1995	12:16:21.60
EASJ76.DAT;1	186	22-FEB-1995	12:12:16.90
EASR47.DAT;1	193	22-FEB-1995	12:12:17.95
EASR77.DAT;1	250	22-FEB-1995	12:12:19.08
EASU46.DAT;1	154	22-FEB-1995	12:12:20.25
EASW45.DAT;1	162	22-FEB-1995	12:12:21.07
EASW75.DAT;1	186	22-FEB-1995	12:12:21.96
EMERAUDE3.DAT;1	34	22-FEB-1995	12:16:22.05
ESTRADA7207.DAT;1	110	22-FEB-1995	12:12:22.92
ESTRADA7303.DAT;1	191	22-FEB-1995	12:12:23.66
FCRG01.DAT;1	123	22-FEB-1995	12:12:24.59
FCRG02.DAT;1	146	22-FEB-1995	12:12:25.31
FCRG03.DAT;1	164	22-FEB-1995	12:12:26.17
FCRG04.DAT;1	122	22-FEB-1995	12:12:27.11
FCRG05.DAT;1	156	22-FEB-1995	12:12:27.84
FCRG06.DAT;1	178	22-FEB-1995	12:12:28.70
FCRG07.DAT;1	151	22-FEB-1995	12:12:29.74
FCRG08.DAT;1	106	22-FEB-1995	12:12:30.59
FCRG09.DAT;1	157	22-FEB-1995	12:12:31.27
FCRG10.DAT;1	111	22-FEB-1995	12:12:32.23
FCRG11.DAT;1	160	22-FEB-1995	12:12:32.92
FCRG12.DAT;1	232	22-FEB-1995	12:12:33.81
FCRG13.DAT;1	153	22-FEB-1995	12:12:35.03
FCRG14.DAT;1	181	22-FEB-1995	12:12:35.88
FCRG15.DAT;1	179	22-FEB-1995	12:12:36.86
FCRG16.DAT;1	160	22-FEB-1995	12:12:37.86
FCRG17.DAT;1	177	22-FEB-1995	12:12:38.71
FCRG18.DAT;1	168	22-FEB-1995	12:12:39.68
FCRG19.DAT;1	167	22-FEB-1995	12:12:40.59
FCRG20.DAT;1	292	22-FEB-1995	12:12:41.50
FCRG21.DAT;1	68	22-FEB-1995	12:12:42.98
FCRG22.DAT;1	524	22-FEB-1995	12:12:43.54
FCRG23.DAT;1	31	22-FEB-1995	12:12:46.06
FCRG24.DAT;1	7	22-FEB-1995	12:12:46.39
FCRG25.DAT;1	75	22-FEB-1995	12:12:46.69
FCRG26.DAT;1	10	22-FEB-1995	12:12:47.26
FCRG27.DAT;1	70	22-FEB-1995	12:12:47.63
FCRG29.DAT;1	37	22-FEB-1995	12:12:48.17
FRBC.DAT;1	224	22-FEB-1995	12:12:48.59
FRO8507.DAT;1	128	22-FEB-1995	12:12:49.66
GBN75-14.DAT;1	222	22-FEB-1995	12:12:50.36
GBN7601.DAT;1	161	22-FEB-1995	12:12:51.50
GLIBERT.DAT;1	55	22-FEB-1995	12:12:52.42
GOME1.DAT;1	248	22-FEB-1995	12:12:52.90
GOME2.DAT;1	58	22-FEB-1995	12:12:54.12
GOME3.DAT;1	34	22-FEB-1995	12:12:54.57
GUIDOME.DAT;1	62	22-FEB-1995	12:16:22.47
HAR.DAT;1	239	22-FEB-1995	12:12:55.01
HOTEC1.DAT;1	41	22-FEB-1995	12:12:56.18
HOTEC2.DAT;1	33	22-FEB-1995	12:12:56.57
IND.DAT;1	1143	22-FEB-1995	12:12:56.97
JGOFS1.DAT;1	74	22-FEB-1995	12:13:01.38
JOINT1.DAT;1	126	22-FEB-1995	12:16:22.92

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JOINT2.DAT;1              508  22-FEB-1995 12:16:23.59
LORENSUPER1.DAT;1         223  22-FEB-1995 12:13:02.01
LORENSUPER2.DAT;1         386  22-FEB-1995 12:13:03.13
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LORENTT144.DAT;1           53  22-FEB-1995 12:13:05.42
LORENTT150.DAT;1           42  22-FEB-1995 12:13:05.87
LORENTT172.DAT;1          290  22-FEB-1995 12:13:06.31
LORENW7805.DAT;1           96  22-FEB-1995 12:13:07.73
MAESTRINI62.DAT;1          53  22-FEB-1995 12:13:08.30
MAESTRINI89.DAT;1         255  22-FEB-1995 12:13:08.74
MARTIN-EQPAC.DAT;1         49  22-FEB-1995 12:13:09.91
MARTIN-ICELAND.DAT;1       28  22-FEB-1995 12:13:10.36
MARTIN-JGOFS.DAT;1         47  22-FEB-1995 12:13:10.67
MARTIN-ROSS.DAT;1          21  22-FEB-1995 12:13:11.09
MED.DAT;1                  46  22-FEB-1995 12:13:11.41
MED1_SIS.DAT;1            531  22-FEB-1995 12:16:25.66
MEDIPRO3.DAT;1            149  22-FEB-1995 12:16:27.82
MEDIPRO6.DAT;1             92  22-FEB-1995 12:16:28.62
MED_IS.DAT;1               50  22-FEB-1995 12:16:29.22
MEX1-65.DAT;1              18  22-FEB-1995 12:13:11.90
MEX10-64.DAT;1             34  22-FEB-1995 12:13:12.22
MEX11-64.DAT;1             24  22-FEB-1995 12:13:12.64
MEX12-64.DAT;1             27  22-FEB-1995 12:13:12.96
MEX2-65-A1.DAT;1           33  22-FEB-1995 12:13:13.29
MEX2-65.DAT;1              12  22-FEB-1995 12:13:13.68
MEX3-65-A1.DAT;1           16  22-FEB-1995 12:13:13.99
MEX3-65.DAT;1              33  22-FEB-1995 12:13:14.29
MEX4-65.DAT;1              16  22-FEB-1995 12:13:14.69
MEX5-64.DAT;1              27  22-FEB-1995 12:13:14.99
MEX6-64.DAT;1              10  22-FEB-1995 12:13:15.32
MEX7-64.DAT;1               6  22-FEB-1995 12:13:15.61
MEX8-64-A1.DAT;1           12  22-FEB-1995 12:13:15.91
MEX8-64.DAT;1              42  22-FEB-1995 12:13:16.22
MEX9-64.DAT;1             146  22-FEB-1995 12:13:16.63
MEXAUG-SEPT-64.DAT;1       28  22-FEB-1995 12:13:17.93
NEWNODC1.DAT;1          14671  22-FEB-1995 12:13:18.23
NEWNODC2.DAT;1           7673  22-FEB-1995 12:14:25.26
NEWSCOR.DAT;1             288  22-FEB-1995 12:14:54.15
NOAA.DAT;1                199  22-FEB-1995 12:14:55.80
NODCMARMAP.DAT;1         7259  22-FEB-1995 12:14:56.97
NSEA-0480.DAT;1            19  22-FEB-1995 12:15:27.25
NSEA-0486.DAT;1           157  22-FEB-1995 12:15:27.67
NSEA-0583.DAT;1            51  22-FEB-1995 12:15:28.50
NSEA-0683.DAT;1            49  22-FEB-1995 12:15:29.02
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NSEA-0687.DAT;1           135  22-FEB-1995 12:15:30.17
NSEA-0782.DAT;1           136  22-FEB-1995 12:15:31.03
NSEA-0785.DAT;1           167  22-FEB-1995 12:15:31.86
NSEA-0786.DAT;1            15  22-FEB-1995 12:15:32.88
NSEA-0881.DAT;1           156  22-FEB-1995 12:15:33.27
NSEA-0884.DAT;1            91  22-FEB-1995 12:15:34.05
ORSTOM900311.DAT;1         12  22-FEB-1995 12:15:34.68
ORSTOM900404.DAT;1          9  22-FEB-1995 12:15:35.02
ORSTOM900414.DAT;1         17  22-FEB-1995 12:15:35.35
ORSTOM900508.DAT;1         11  22-FEB-1995 12:15:35.70
ORSTOM900518.DAT;1         10  22-FEB-1995 12:15:36.04
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ORSTOM900601.DAT;1	12	22-FEB-1995	12:15:36.38
ORSTOM900604.DAT;1	10	22-FEB-1995	12:15:36.71
ORSTOM900615.DAT;1	15	22-FEB-1995	12:15:37.02
ORSTOM900624.DAT;1	13	22-FEB-1995	12:15:37.33
ORSTOM900710.DAT;1	9	22-FEB-1995	12:15:37.67
ORSTOM900713.DAT;1	13	22-FEB-1995	12:15:38.03
ORSTOM900719.DAT;1	22	22-FEB-1995	12:15:38.42
ORSTOM900723.DAT;1	15	22-FEB-1995	12:15:38.74
ORSTOM900806.DAT;1	9	22-FEB-1995	12:15:39.08
ORSTOM900815.DAT;1	12	22-FEB-1995	12:15:39.42
ORSTOM900817.DAT;1	12	22-FEB-1995	12:15:39.72
ORSTOM900905.DAT;1	13	22-FEB-1995	12:15:40.04
ORSTOM900910.DAT;1	16	22-FEB-1995	12:15:40.35
ORSTOM900912.DAT;1	16	22-FEB-1995	12:15:40.66
ORSTOM901005.DAT;1	17	22-FEB-1995	12:15:41.00
ORSTOM901011.DAT;1	14	22-FEB-1995	12:15:41.34
ORSTOM901015.DAT;1	10	22-FEB-1995	12:15:41.68
PACIPROD.DAT;1	83	22-FEB-1995	12:16:29.66
PRP.DAT;1	45	22-FEB-1995	12:15:42.00
RCA.DAT;1	37	22-FEB-1995	12:16:30.25
SATL.DAT;1	85	22-FEB-1995	12:15:42.46
SAYED46.DAT;1	134	22-FEB-1995	12:15:43.12
SAYED51.DAT;1	129	22-FEB-1995	12:15:44.00
SOMAL.DAT;1	180	22-FEB-1995	12:15:44.81
TAKAHASHI84.DAT;1	175	22-FEB-1995	12:15:45.86
TAKAHASHI85.DAT;1	200	22-FEB-1995	12:15:46.87
TOG.DAT;1	772	22-FEB-1995	12:15:47.96
TOGG.DAT;1	494	22-FEB-1995	12:15:51.52
WCR.DAT;1	234	22-FEB-1995	12:15:53.85
YENTSCHA.DAT;1	334	22-FEB-1995	12:15:55.05
YENTSCHB.DAT;1	329	22-FEB-1995	12:15:56.52
YENTSCHC.DAT;1	379	22-FEB-1995	12:15:58.08
YENTSCHD.DAT;1	550	22-FEB-1995	12:15:59.65
YENTSCHE.DAT;1	545	22-FEB-1995	12:16:01.88
YENTSCHF.DAT;1	546	22-FEB-1995	12:16:04.09
YENTSCHG.DAT;1	409	22-FEB-1995	12:16:06.28
YENTSCHH.DAT;1	281	22-FEB-1995	12:16:08.04
YENTSCHI.DAT;1	319	22-FEB-1995	12:16:09.36
YENTSCHJ.DAT;1	286	22-FEB-1995	12:16:10.85
YENTSCHK.DAT;1	314	22-FEB-1995	12:16:12.24
YENTSCHL.DAT;1	105	22-FEB-1995	12:16:13.59

Total of 204 files, 62108 blocks.

4 RECORD LAYOUTS

Each file may contain different data types stored in a different records and different record types.

Record types A, B, and C contain basic information on cruise dates, ship and station information, and a text file for miscellaneous comments.

Record D is for pigment and productivity data integrated to the 1% light depth. Also included are incident irradiance data and basic water transparency.

Record E includes ancillary data for temperature, salinity, oxygen, and nutrients.

Record F holds data concerning organic matter, particulate and dissolved.

Record G covers the inorganic carbon fractions.

Records H and I store phytoplankton pigment data.

Record J is specifically for chlorophyll a and phaeophytin.

Record K is for any other data on accessory pigments of phytoplankton. These data are of particular use for interpretation of ocean radiance measurements during color satellite missions.

Productivity data will be stored in either of two ways:

Records J and K will be for storage of productivity data when one water sample has been incubated at one light intensity (e.g., the intensity at which the water was sampled). Record J contains the particulars about incubation protocol and methodology while record K contains the actual data.

The second storage format is for productivity measurements in which one sample has been incubated at a range of light intensities (e.g., photosynthesis-light curves). Record L contains the measurement protocol and records M and P contain the data. Note that in this case, light intensity is given for the sample depth as well as the various incubation light levels.

The last record, record X, contains the results from continuous profiles (either horizontal or vertical). These data include continuous measurements of temperature, salinity, chlorophyll fluorescence, transmittance, and nutrients (autoanalyzer only). It is assumed that the data are calibrated and digitized before submittal.

Fields for all records are further defined below.

RECORD LAYOUTS

Record Identifier: A
Record Name: File Header Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	SHIP
05	CRUISE
06	DATES
07	NAME
08	INST

Record Identifier: B
Record Name: Text Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	TEXT

Record Identifier: C
Record Name: Sample Header Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	CASTS
06	LAT
07	LATHEM
08	LON
09	LONHEM
10	DATE
11	TIME
12	STNDEPTH
13	NUMDEPTH
14	PCTCLD
15	WINDSP
16	WINDDIR

Record Identifier: D
Record Name: Integrated Values Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	IZ
06	ICHL
07	IPHAEO
08	ICA
09	UNITICA
10	HV
11	CHV
12	SD

Record Identifier: E
Record Name: Temperature, Salinity, O2, and Nutrients Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	TSIGN
07	TEMP
08	SAL
09	DO
10	DOUNIT
11	AOU
12	AOUUNIT
13	NO3
14	NO3UNIT
15	NO2
16	NO2UNIT
17	NH4
18	NH4UNIT
19	UREA
20	UREAUNIT
21	PO4
22	PO4UNIT
23	SIO4
24	SIO4UNIT

Record Identifier: F
Record Name: Organic Matter Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	PREFILT
08	DOCPORE
09	DOCPROT
10	DOC
11	DON
12	POCPROT
13	POCPORE
14	POC
15	PON
16	ATP

Record Identifier: G
Record Name: Inorganic Carbon Record
***Note: No Records of this type appear in this release.

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PH
07	TITRAT
08	TITRCOD
09	PCO2
10	PCO2COD
11	DIC
12	DICCOD
13	PIC
14	PICCOD

Record Identifier: H
Record Name: Pigments, Chlorphyll a and Phaeophytin

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	CHLCODE
08	CFCODE
09	FILTCODE
10	PORESIZE
11	CHLCONC
12	PHAEOCONC

Record Identifier: I
Record Name: Other Pigments
***Note: No Records of this type appear in this release.

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	PIGAMCOD
08	PIGAQ1
09	PIGAFCOD
10	PIGAPORE
11	PIGAPIG
12	PIGACUN
13	PIGACONC
14	PIGBMCOD
15	PIGBQ1
16	PIGBFCOD
17	PIGBPORE
18	PIGBPIG
19	PIGBCUN
20	PIGBCONC
21	PIGCMCOD
22	PIGCQ1
23	PIGCFCOD
24	PIGCPORE
25	PIGCPIG
26	PIGCCUN
27	PIGCCONC
28	PIGDMCOD
29	PIGDQ1
30	PIGDFCOD
31	PIGDPORE
32	PIGDPIG
33	PIGDCUN
34	PIGDCONC

Record Identifier: J
Record Name: Productivity Protocol - Single L.I.P.S.

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	HV
08	CHV
09	INSTRUMENT
10	Q1
11	Q2
12	Q3
13	Q4
14	Q5
15	Q6
16	BOT
17	CLEAN
18	Q7
19	Q8
20	Q9
21	Q10
22	INCS
23	INCF
24	INCTIME
25	INCTYPE
26	BOTVOL
27	NUMREPS
28	C14ADD
29	CC14ADD
30	CNTR
31	FILTCODE
32	PORESIZE

Record Identifier: K
Record Name: Productivity Data

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	CHLCONC
08	C14UNIT
09	C14EXP1
10	C14TIME1
11	C14EXP2
12	C14TIME2
13	C14EXP3
14	C14TIME3
15	C14DK
16	C14DIFF

Record Identifier: L
Record Name: Photosynthesis Light Curves - Multiple L.I.P.S. - Protocol

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	HV
08	CHV
09	INSTRUMENT
10	Q1
11	Q2
12	Q3
13	Q4
14	Q5
15	Q6
16	BOT
17	CLEAN
18	Q7
19	Q8
20	Q9
21	Q10
22	INCS
23	INCF
24	INCTIME
25	INCTYPE
26	BOTVOL
27	NUMREPS
28	C14ADD
29	CC14ADD
30	CNTR
31	FILTCODE
32	PORESIZE
33	Q11

Record Identifier: M
Record Name: Photosynthesis Light Curves - Data

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	PCTLT
07	CHLCONC
08	CHV
09	HV
10	INSTRUMENT
11	C14UNIT
12	PILT1
13	PI1
14	PILT2
15	PI2
16	PILT3
17	PI3
18	PILT4
19	PI4
20	PILT5
21	PI5

Record Identifier: P
Record Name: Photosynthesis Light Curves - Data - Continuation Record

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	STN
05	ZSAMP
06	SEQ
07	NUMSAMP
08	PILT(01)
09	PI(01)
10	PILT(02)
11	PI(02)
12	PILT(03)
13	PI(03)
14	PILT(04)
15	PI(04)
16	PILT(05)
17	PI(05)
18	PILT(06)
19	PI(06)
20	PILT(07)
21	PI(07)
22	PILT(08)
23	PI(08)
24	PILT(09)
25	PI(09)
26	PILT(10)
27	PI(10)
28	PILT(11)
29	PI(11)
30	PILT(12)
31	PI(12)
32	PILT(13)
33	PI(13)
34	PILT(14)
35	PI(14)
36	PILT(15)
37	PI(15)
38	PILT(16)
39	PI(16)
40	PILT(17)
41	PI(17)
42	PILT(18)
43	PI(18)
44	PILT(19)
45	PI(19)
46	PILT(20)
47	PI(20)

Record Identifier: X
Record Name: Continuous Measurements of Temperature, Salinity, Transmittance & Fluorescence (Horizontal and/or Vertical)

***Note: No Records of this type appear in this release.

Seq Num	Field Acronym
01	FORM
02	ID
03	RECORD
04	HORVER
05	DATE
06	TIME
07	LAT
08	LATHEM
09	LON
10	LONHEM
11	ZSAMP
12	TSIGN
13	TEMP
14	SAL
15	XMITPCT
16	FLUCHL
17	AUTNO3
18	AUTNO2
19	AUTNH4
20	AUTSIO4
21	AUTPO4

5 FIELD DICTIONARY

Field Acronym: AOU
Representation: F6.3
Restrictions:
Description: Apparent Oxygen Utilization

Field Acronym: AOUUNIT
Representation: I1
Restrictions: Code 5
Description: Apparent Oxygen Utilization Units

Field Acronym: ATP
Representation: F7.3 xxx.xxu, u is code
Restrictions: Code 8
Description: Adenosine Triphosphate

Field Acronym: AUTNH4
Representation: F6.3
Restrictions:
Description: Autoanalyzer Ammonium

Field Acronym: AUTNO2
Representation: F6.3
Restrictions:
Description: Autoanalyzer Nitrite

Field Acronym: AUTNO3
Representation: F6.3
Restrictions:
Description: Autoanalyzer Nitrate

Field Acronym: AUTPO4
Representation: F6.3
Restrictions:
Description: Autoanalyzer Phosphate

Field Acronym: AUTSIO4
Representation: F6.3
Restrictions:
Description: Autoanalyzer Silicate

Field Acronym: BOT
Representation: I1
Restrictions: Code 20
Description: Bottle type

Field Acronym: BOTVOL
Representation: I5
Restrictions:
Description: Bottle volume

Field Acronym: C14ADD
Representation: E8.3 x.xxe+xx
Restrictions:

Description: Carbon-14 added

Field Acronym: C14DIFF
Representation: E8.3 x.xxxe+x
Restrictions:
Description: Light/Dark Difference

Field Acronym: C14DK
Representation: E8.3 x.xxxe+x
Restrictions:
Description: Carbon-14 in dark

Field Acronym: C14EXP1
Representation: E8.3 x.xxxe+x
Restrictions:
Description: C-14 fixed per experiment

Field Acronym: C14EXP2
Representation: E8.3
Restrictions:
Description:

Field Acronym: C14EXP3
Representation: E8.3
Restrictions:
Description:

Field Acronym: C14TIME1
Representation: E8.3 x.xxxe+x
Restrictions:
Description: C-14 fixed per unit time

Field Acronym: C14TIME2
Representation: E8.3
Restrictions:
Description:

Field Acronym: C14TIME3
Representation: E8.3
Restrictions:
Description:

Field Acronym: C14UNIT
Representation: I3
Restrictions: Codes 25, 26, 27
Description: Carbon-14 Units

Field Acronym: CASTS
Representation: I2
Restrictions:
Description: Number of casts in the station

Field Acronym: CC14ADD
Representation: I1
Restrictions: Code 23
Description: Carbon-14 added code

Field Acronym: CFCODE
Representation: A1
Restrictions: Code 33
Description: Was material concentrated on a filter?

Field Acronym: CHLCODE
Representation: I1
Restrictions: Code 13
Description: Chlorophyll measurement type

Field Acronym: CHLCONC
Representation: F6.3
Restrictions:
Description: Concentration of chlorophyll-a ug/l

Field Acronym: CHV
Representation: I3
Restrictions: Codes 2, 3, 4
Description: Codes for light intensity measurments

Field Acronym: CLEAN
Representation: I4
Restrictions: Code 21
Description: Cleaning technique protocol

Field Acronym: CNTR
Representation: I1
Restrictions: Code 30
Description: Type of counter

Field Acronym: CRUISE
Representation: A6
Restrictions:
Description: Originator’s cruise identification

Field Acronym: DATE
Representation: I6
Restrictions:
Description: Sample date in GMT

Field Acronym: DATES
Representation: A17
Restrictions: Format is "mm/dd/yy-mm/dd/yy"
Description: Beginning and end dates

Field Acronym: DIC
Representation: F6.1
Restrictions:
Description: Disolved inorganic carbon

Field Acronym: DICCODE
Representation: I1
Restrictions: Code 12
Description: Disolved inorganic carbon units

Field Acronym: DO
Representation: F9.4
Restrictions:
Description: Disolved oxygen

Field Acronym: DOC
Representation: F7.3
Restrictions: Code 8
Description: Concentration for DOC values

Field Acronym: DOCPORE
Representation: F4.1
Restrictions:
Description: Effective filter pore size microns

Field Acronym: DOCPROT
Representation: I1
Restrictions: Code 7
Description: Protocol code for DOC measurements

Field Acronym: DON
Representation: F7.3
Restrictions: Code 8
Description: Concentration for DON values

Field Acronym: DOUNIT
Representation: I1
Restrictions: Code 5
Description: Disolved oxygen units

Field Acronym: FILTCODE
Representation: I1
Restrictions: Code 14
Description: Filter code

Field Acronym: FLUCHL
Representation: F5.2
Restrictions:
Description: Fluorescence of Chlorophyll mg/m3

Field Acronym: FORM
Representation: I3
Restrictions:
Description: Identification of file format

Field Acronym: HORVER
Representation: A1
Restrictions: Code 34
Description: Continuous profile orientation horizontal or vertical?

Field Acronym: HV
Representation: E8.3 x.xxe+xx
Restrictions:
Description: Photosynthetically available radiation (PAR)

Field Acronym: ICA

Representation: F6.3
Restrictions:
Description: Integrated carbon-14 production

Field Acronym: ICHL
Representation: F6.2
Restrictions:
Description: Integrated chlorophyll-a assimilation mg/m2

Field Acronym: ID
Representation: I6
Restrictions:
Description: Unique identification for data set

Field Acronym: INCF
Representation: I4
Restrictions: Format is HHMM GMT
Description: Incubation finish time

Field Acronym: INCS
Representation: I4
Restrictions: Format is HHMM GMT
Description: Incubation start time

Field Acronym: INCTIME
Representation: I4
Restrictions: Format is HHMM
Description: Incubation elapsed time

Field Acronym: INCTYPE
Representation: I1
Restrictions: Code 22
Description: Incubation type

Field Acronym: INST
Representation: A17
Restrictions:
Description: Name of institution and country

Field Acronym: INSTRUMENT
Representation: I1
Restrictions: Code 19
Description: Light meter type

Field Acronym: IPHAEO
Representation: F6.2
Restrictions:
Description: Integrated phaeopigments mg/m2

Field Acronym: IZ
Representation: I3
Restrictions:
Description: Integration depth

Field Acronym: LAT
Representation: I5

Restrictions:
Description: Latitude

Field Acronym: LATHEM
Representation: A1
Restrictions: Code 36
Description: Latitude hemisphere

Field Acronym: LON
Representation: I6
Restrictions:
Description: Longitude

Field Acronym: LONHEM
Representation: A1
Restrictions: Code 35
Description: Longitude hemisphere

Field Acronym: NAME
Representation: A19
Restrictions:
Description: Name of investigator

Field Acronym: NH4
Representation: F6.3
Restrictions:
Description: Ammonium

Field Acronym: NH4UNIT
Representation: I1
Restrictions: Code 6
Description: Ammonium units

Field Acronym: NO2
Representation: F6.3
Restrictions:
Description: Nitrite

Field Acronym: NO2UNIT
Representation: I1
Restrictions: Code 6
Description: Nitrite concentration units

Field Acronym: NO3
Representation: F6.3
Restrictions:
Description: Nitrate

Field Acronym: NO3UNIT
Representation: I1
Restrictions: Code 6
Description: Nitrate concentration units

Field Acronym: NUMDEPTH
Representation: I2
Restrictions:

Description: Number of depths sampled

Field Acronym: NUMREPS
Representation: I2
Restrictions:
Description: Number of replicates

Field Acronym: NUMSAMP
Representation: I1
Restrictions:
Description: Number of remaining samples in this record

Field Acronym: PCO2
Representation: F6.1
Restrictions:
Description: CO2 pressure

Field Acronym: PCO2COD
Representation: I1
Restrictions: Code 11
Description: CO2 pressure code

Field Acronym: PCTCLD
Representation: I3
Restrictions:
Description: Percent of cloud cover

Field Acronym: PCTLT
Representation: F5.1
Restrictions:
Description: Percent light from Secchi or PAR measurment

Field Acronym: PH
Representation: F5.3
Restrictions:
Description: Alkalinity

Field Acronym: PHAEOCONC
Representation: F6.2
Restrictions:
Description: Phaeophytin

Field Acronym: PI(*)
Representation: E8.3
Restrictions:
Description: This is a 20 * 8.3 array of carbon fixation samples

Field Acronym: PI1
Representation: E8.3
Restrictions:
Description: Carbon fixation measurement 1

Field Acronym: PI2
Representation: E8.3
Restrictions:
Description: Carbon fixation measurement 2

Field Acronym: PI3
Representation: E8.3
Restrictions:
Description: Carbon fixation measurement 3

Field Acronym: PI4
Representation: E8.3
Restrictions:
Description: Carbon fixation measurement 4

Field Acronym: PI5
Representation: E8.3
Restrictions:
Description: Carbon fixation measurement 5

Field Acronym: PILT(*)
Representation: E8.3
Restrictions:
Description: This is a 20 * 8.3 array of percent light values

Field Acronym: PILT1
Representation: E8.3
Restrictions:
Description: Percent light measurment 1

Field Acronym: PILT2
Representation: E8.3
Restrictions:
Description: Percent light measurment 2

Field Acronym: PILT3
Representation: E8.3
Restrictions:
Description: Percent light measurment 3

Field Acronym: PILT4
Representation: E8.3
Restrictions:
Description: Percent light measurment 4

Field Acronym: PILT5
Representation: E8.3
Restrictions:
Description: Percent light measurment 5

Field Acronym: PIC
Representation: F6.1
Restrictions:
Description: Particulate inorganic carbon

Field Acronym: PICCOD
Representation: I1
Restrictions: Code 12
Description: Particulate inorganic carbon code

Field Acronym: PIGACONC
Representation: F6.3
Restrictions:
Description: Concentration of pigment

Field Acronym: PIGACUN
Representation: I1
Restrictions: Code 18
Description: Concentration of pigment units

Field Acronym: PIGAFCOD
Representation: I1
Restrictions: Code 16
Description: Pigment filter code

Field Acronym: PIGAMCOD
Representation: I1
Restrictions: Code 15
Description: Pigment method code

Field Acronym: PIGAPIG
Representation: I2
Restrictions: Code 17
Description: Pigment type

Field Acronym: PIGAPORE
Representation: F4.1
Restrictions:
Description: Effective pore size of filters

Field Acronym: PIGAQ1
Representation: A1
Restrictions: Code 33
Description: Material concentrated on filter?

Field Acronym: PIGBCONC
Representation: F6.3
Restrictions:
Description: Concentration of pigment

Field Acronym: PIGBCUN
Representation: I1
Restrictions: Code 18
Description: Concentration of pigment units

Field Acronym: PIGBFCOD
Representation: I1
Restrictions: Code 16
Description: Pigment filter code

Field Acronym: PIGBMCOD
Representation: I1
Restrictions: Code 15
Description: Pigment method code

Field Acronym: PIGBPIG

Representation: I2
Restrictions: Code 17
Description: Pigment type

Field Acronym: PIGBPORE
Representation: F4.1
Restrictions:
Description: Effective pore size of filters

Field Acronym: PIGBQ1
Representation: A1
Restrictions: Code 33
Description: Material concentrated on filter?

Field Acronym: PIGCCONC
Representation: F6.3
Restrictions:
Description: Concentration of pigment

Field Acronym: PIGCCUN
Representation: I1
Restrictions: Code 18
Description: Concentration of pigment units

Field Acronym: PIGCFCOD
Representation: I1
Restrictions: Code 16
Description: Pigment filter code

Field Acronym: PIGCMCOD
Representation: I1
Restrictions: Code 15
Description: Pigment method code

Field Acronym: PIGCPIG
Representation: I2
Restrictions: Code 17
Description: Pigment type

Field Acronym: PIGCPORE
Representation: F4.1
Restrictions:
Description: Effective pore size of filters

Field Acronym: PIGCQ1
Representation: A1
Restrictions: Code 33
Description: Material concentrated on filter?

Field Acronym: PIGDCONC
Representation: F6.3
Restrictions:
Description: Concentration of pigment

Field Acronym: PIGDCUN
Representation: I1

Restrictions: Code 18
Description: Concentration of pigment units

Field Acronym: PIGDFCOD
Representation: I1
Restrictions: Code 16
Description: Pigment filter code

Field Acronym: PIGDMCOD
Representation: I1
Restrictions: Code 15
Description: Pigment method code

Field Acronym: PIGDPIG
Representation: I2
Restrictions: Code 17
Description: Pigment type

Field Acronym: PIGDPORE
Representation: F4.1
Restrictions:
Description: Effective pore size of filters

Field Acronym: PIGDQ1
Representation: A1
Restrictions: Code 33
Description: Material concentrated on filter?

Field Acronym: PO4
Representation: F6.3
Restrictions:
Description: Inorganic phosphate

Field Acronym: PO4UNIT
Representation: I1
Restrictions: Code 6
Description: Inorganic phosphate units

Field Acronym: POC
Representation: F7.3
Restrictions: Code 8
Description: Particulate organic carbon

Field Acronym: POCPORE
Representation: F4.1
Restrictions:
Description: POC filter effective pore size

Field Acronym: POCPROT
Representation: I1
Restrictions: Code 9
Description: Particulate protocol code

Field Acronym: PON
Representation: F7.3
Restrictions: Code 8

Description: Particulate organic nitrogen

Field Acronym: PORESIZE
Representation: F5.2
Restrictions:
Description: Pore size

Field Acronym: PREFILT
Representation: A1
Restrictions: Code 33
Description: Sample preparation prefiltered?

Field Acronym: Q10
Representation: A1
Restrictions: Code 33
Description: Was C14 preprared in glass ampoules?

Field Acronym: Q11
Representation: A1
Restrictions: Code 33
Description: Subtract time zero? If "u", assume dark value was not subtracted

Field Acronym: Q1
Representation: A1
Restrictions: Code 33
Description: Was chlorophyll measured on the same samples?

Field Acronym: Q2
Representation: A1
Restrictions: Code 33
Description: Were sampling bottles tested for toxicity?

Field Acronym: Q3
Representation: A1
Restrictions: Code 33
Description: Were filters used in C14 determination?

Field Acronym: Q4
Representation: A1
Restrictions: Code 33
Description: Was the C14 passing the filters determined?

Field Acronym: Q5
Representation: A1
Restrictions: Code 33
Description: Were filters treated to drive off carbonates?

Field Acronym: Q6
Representation: A1
Restrictions: Code 33
Description: Is any carbonate C14 included in the values?

Field Acronym: Q7
Representation: A1
Restrictions: Code 33
Description: Was non-metallic hydro-wire used, e.g. Kevlar line?

Field Acronym: Q8
Representation: A1
Restrictions: Code 33
Description: Were coated messengers used, e.g. Teflon coated?

Field Acronym: Q9
Representation: A1
Restrictions: Code 33
Description: Were samples exposed to black rubber, e.g. o-rings, tubings?

Field Acronym: RECORD
Representation: A1
Restrictions:
Description: Identifies the record type - A, B, C, etc

Field Acronym: SAL
Representation: F6.3
Restrictions:
Description: Salinity in parts per thousand

Field Acronym: SD
Representation: F4.1
Restrictions:
Description: Secchi depth in meters

Field Acronym: SEQ
Representation: I2
Restrictions:
Description: Sequence number for continuation records

Field Acronym: SHIP
Representation: A11
Restrictions:
Description: Vessel name

Field Acronym: SIO4
Representation: F7.3
Restrictions:
Description: Silicate

Field Acronym: SIO4UNIT
Representation: I1
Restrictions: Code 6
Description: Silicate units

Field Acronym: STN
Representation: I3
Restrictions:
Description: Station identifier

Field Acronym: STNDEPTH
Representation: I4
Restrictions:
Description: Depth to bottom in whole meters

Field Acronym: TEMP
Representation: F6.3
Restrictions:
Description: Degrees C

Field Acronym: TEXT
Representation: A70
Restrictions:

Field Acronym: TIME
Representation: I4
Restrictions:
Description: Sample time GMT

Field Acronym: TITRAT
Representation: F6.3
Restrictions:
Description: Titration

Field Acronym: TITRCOD
Representation: I1
Restrictions: Code 10
Description: Titration code

Field Acronym: TSIGN
Representation: A1
Restrictions: " " for positive, "-" for negative
Description: Temperature sign

Field Acronym: UNITICA
Representation: I1
Restrictions: Code 1
Description: Integrated carbon assimilation units

Field Acronym: UREA
Representation: F6.3
Restrictions:
Description: Urea

Field Acronym: UREAUNIT
Representation: I1
Restrictions: Code 6
Description: Urea units

Field Acronym: WINDDIR
Representation: I3
Restrictions:
Description: Degrees from which the wind is coming

Field Acronym: WINDSP
Representation: I2
Restrictions:
Description: Wind speed in knots

Field Acronym: XMITPCT
Representation: F4.1

Restrictions:
Description: Transmittance percentage

Field Acronym: ZSAMP
Representation: I4
Restrictions:
Description: Sample depth

6 ENUMERATED CODES

Code 1:
1 = gC/m2/day
2 = moles C/m2/day
3 = gC/m2/hr
4 = moles C/m2/hr

Code 2:
1 = quanta
2 = Einsteins
3 = lux
4 = langleys
5 = kw-hr
6 = ft-candles

Code 3:
1 = per day
2 = per hour
3 = per minute
4 = per second

Code 4:
1 = per cm2
2 = per m2

Code 5:
1 = mmol/l
2 = ml/l
3 = mg/l
4 = mg-at/l

Code 6:
1 = umol/l
2 = ug-at/l
3 = mg/m3 (= ug/l)

Code 7:
1 = UV oxidation
2 = wet oxidation (e.g., with persulphate)
3 = high temperature oxidation (e.g., w. copper oxide or cobalt oxide)
4 = unknown

Code 8:
1 = ug/l (= mg/m3)
2 = umol/l (=mmol /m3)
3 = nanograms/l

Code 9:
1 = glass fiber filters
2 = other
3 = unknown

Code 10:
1 = ueq/kg

2 = umol/kg
3 = ueq/l
4 = umol/l

Code 11:
1 = u atm

Code 12:
1 = umol/kg
2 = umol/l
3 = ug/kg
4 = ug/l

Code 13:
1 = fluorometric
2 = spectrophotometric
3 = high performance liquid chromatography
4 = unknown

Code 14:
1 = glass fiber
2 = Millipore-type membrane
3 = Nuclepore-type membrane
4 = unknown

Code 15:
1 = fluorometric
2 = spectrophotometric
3 = high performance liquid chromatography

Code 16:
1 = glass fiber
2 = Millipore-type membrane
3 = Nuclepore-type membrane
4 = paper
5 = unknown

Code 17:
01 = chlorophyll b
02 = chlorophyll c1
03 = chlorophyll c2
04 = fucoxanthin
05 = fucoxanthinol
06 = neofucoxanthin
07 = diatoxanthin
08 = dinoxanthin
09 = peridinin
10 = neoperidinin
11 = lutein
12 = zeaxanthin
13 = flavoxanthin
14 = violaxanthin
15 = neoxanthin
16 = alloxanthin
17 = astaxanthin
18 = monodoxanthin

19 = crocoxanthin
20 = myxoxanthin
21 = myxoxanthophyll
22 = anthraxanthin
23 = siphonaxanthin
24 = phycoerythrin
25 = phycocyanin
26 = phycourbilin
27 = 19’-hexanoyl fucoxanthin
28 = 19’-butanoyl fucoxanthin
29 = diadinoxanthin
30 = diatoxanthin
31 = echinenone
32 = phaeophorbide-a
33 = chlorophyllide-a
34 = alpha-carotene
35 = beta-carotene
36 = gamma-carotene

Code 18:
1 = ug/l
2 = nanograms/l

Code 19:
1 = measurement integrated over 2-pi steradians
2 = measurement integrated over 4-pi steradians
3 = co-sine collector
4 = unknown

Code 20:
1 = borosilicate glass
2 = quartz
3 = polycarbonate
4 = other
5 = unknown

Code 21:
1 = soap
2 = hydrochloric acid
3 = nitric acid
4 = sulfuric acid
5 = distilled water rinses
6 = other
7 = unknown Note: Report in order up to 4, if known.

Code 22:
1 = on deck (simulated incubation in-situ)
2 = in-situ
3 = artificial light
4 = unknown

Code 23:
1 = u Curies
2 = dpm
3 = other
4 = unknown

Code 24:
1 = planchette/Geiger
2 = scintillation
3 = other
4 = unknown

Code 25:
1 = ug
2 = mg C
3 = umol C
4 = mmol C
5 = CPM C fixed (use only as a last resort)
6 = DPM C fixed (use only as a last resort)

Code 26:
1 = per m3
2 = per liter
3 = per mg chlorophyll a

Code 27:
1 = per hour
2 = per day
3 = per half-day
4 = unknown

Code 28:
1 = on deck (simulated in situ) incubation
2 = in situ
3 = artificial light
4 = unknown

Code 29:
1 = u Curies
2 = DPM
3 = other
4 = unknown

Code 30:
1 = planchette/Geiger
2 = scintillation
3 = other
4 = unknown

Code 31:
1 = measurement integrated over 2-pi steradians
2 = measurement integrated over 4-pi steradians
3 = cosine collector
4 = unknown

Code 32:
1 = ug C
2 = mg C
3 = umol C
4 = mmol C
5 = CPM

6 = DPM (only as last resort)

Code 33:
Y = Yes
N = No
U = Unknown

Code 34:
H = Horizontal
V = Vertical

Code 35:
E = East
W = West

Code 36:
N = North
S = South