[redacted]

#629

VOYAGER 1 + 2

RADIO OCCULTATIONS BY SATURN AND TITAN

77-076A-02E
77-084A-02G
77-084A-02H
77-084A-02I

[redacted]

VOYAGER 2

RADIO, OCCULTATION, SATURN ENCOUNT

77-076A-02E

This data set has been restored. There were originally two 9-track, 1600 BPI tapes written in Binary. There is one restored tape. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The original tapes were created on a S250 computer and the restored tapes were created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR004839	DS004839	D059815	1 - 2	08/26/81 - 08/26/81
		D059816	3 - 4	08/26/81 - 08/26/81

VOYAGER 1

RADIO, OCCULT,TITAN ENCOUNT (MED)

77-084A-02G

This data set has been restored. There were originally eight 9-track, 1600 BPI tapes written in Binary. There are three restored tapes. The DR tapes are 3480 cartridges and the DS tapes are 9-track, 6250 BPI. The original tapes were created on a S250 computer and the restored tapes were created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR004844	DS004844	D059817	1 - 2	11/12/80 - 11/12/80
		D059818	3 - 4	11/12/80 - 11/12/80
		D059819	5 - 6	11/12/80 - 11/12/80
DR004845	DS004845	D059820	1 - 2	11/12/80 - 11/12/80
		D059821	3 - 4	11/12/80 - 11/12/80
		D059822	5 - 6	11/12/80 - 11/12/80
DR004846	DS004846	D059823	1 - 2	11/12/80 - 11/12/80
		D059824	3	11/12/80 - 11/12/80

VOYAGER 1

RADIO, OCCULT,SATURN ENCOUNT (NAR)

77-084A-02H

This data set has been restored. There were originally five 9-track, 1600 BPI tapes written in Binary. There are two restored tapes. The DR tapes are 3480 cartridges and the DS tapes are 9-track, 6250 BPI. The original tapes were created on a S250 computer and the restored tapes were created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR004842	DS004842	D059825	1 - 2	11/13/80 - 11/13/80
		D059826	3 - 4	11/13/80 - 11/13/80
		D059827	5 - 6	11/13/80 - 11/13/80
DR004843	DS004843	D059828	1 - 2	11/13/80 - 11/13/80
		D059829	3 - 4	11/13/80 - 11/13/80

VOYAGER 1

RADIO, OCCULT,SATURN ENCOUNT (MED)

77-084A-02I

This data set has been restored. There was originally one 9-track, 1600 BPI tape written in Binary. There is one restored tape. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The original tape was created on a S250 computer and the restored tape was created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D number are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR004838	DS004838	D059830	1 - 2	11/13/80 - 11/13/80

REQ. AGENT	RAND NO.	ACQ. AGENT
DAD	V0231	WSC

VOYAGER 1 + 2

RADIO OCCULTATIONS BY SATURN AND TITAN

77-076A-02E
77-084A-02G
77-084A-02H
77-084A-02I

THIS DATA SET CONSISTS OF VOYAGER 1 + 2 TAPES. THEY ARE 9 TRACK, 1600 BPI, BINARY AND WERE CREATED ON A DATA GENERAL ECLIPSE S250 COMPUTER. THE TAPES ALL HAVE 2 FILES EXCEPT D-59824 WHICH HAS 1 FILE. FOLLOWING IS A LIST OF D AND C NUMBERS ALONG WITH THE TIME SPANS:

VOYAGER 2 77-076A-02E, SATURN ENCOUNTER (MEDIUMBAND)

D#	C#	TIME SPAN
D-59815	C-23671	08/26/81
D-59816	C-23672	08/26/81

VOYAGER 1 77-084A-02G, TITAN ENCOUNTER (MEDIUMBAND)

D#	C#	TIME SPAN
D-59817	C-23673	11/12/80
D-59818	C-23674	11/12/80
D-59819	C-23675	11/12/80
D-59820	C-23676	11/12/80
D-59821	C-23677	11/12/80
D-59822	C-23578	11/12/80
D-59823	C-23679	11/12/80
D-59824	C-23680	11/12/80

VOYAGER 1 77-084A-02H, SATURN ENCOUNTER (NARROWBAND)

D#	C#	TIME SPAN
D-59825	C-23681	11/13/80
D-59826	C-23682	11/13/80
D-59827	C-23683	11/13/80
D-59828	C-23684	11/13/80
D-59829	C-23685	11/13/80

VOYAGER 1 77-084A-02I, SATURN ENCOUNTER (MEDIUMBAND)

D#	C#	TIME SPAN
D-59830	C-23687	11/13/80

77-076A-02E
77-084A-02G
77-084A-02H
77-084A-02I

Voyager Radio Science Experiment

Voyagers 1 and 2

Radio Occultations by Saturn and Titan

Archival Data Set

Forwarded to NSSDC
July 22, 1983

Prepared by D. P. Hinson and G. L. Tyler
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415-497-3597
415-497-3535

Voyager Radio Occultation Experiments: The Atmospheres of Saturn and Titan

The exploration of the Saturnian System using the Voyager spacecraft included dual-wavelength radio observations of occultations by both Titan and Saturn. This document describes the reduced radio occultation data stored on magnetic tapes at the NSSDC. A general discussion of the radio equipment and measurement strategy is given by Eshleman et al. [1977]; on the basis of analysis of the radio occultation data, Tyler et al. [1981, 1982], Lindal et al. [1983], Hinson and Tyler [1983], and Hinson [1983] have reported results concerning the structure, composition, and dynamics of the atmospheres of Saturn and Titan. These references should also be consulted for additional discussion of the experimental geometry, measurements, and data reduction.

Fundamental Measurements and Data Reduction

During each occultation experiment, the Voyager spacecraft transmitted two unmodulated, coherently related radio signals in right-circular polarization; the two wavelengths (about 13 cm and 3.6 cm) were in the exact ratio 11:3. These signals were received with the NASA Deep Space Network (DSN) 64-m antenna tracking stations, where they were coherently sampled and recorded for later processing. For the occultations of Voyager 1 by Titan and Voyager 2 by Saturn, a "mediumband" recording system was employed at the DSN station. For the Voyager 1 occultation by Saturn, data were recorded by a "narrowband" system during ingress, and the mediumband system during egress. Although the formats of the recorded data differed slightly between the two systems, the same processing steps were applied in reducing both types of data.

The IDR's (Intermediate Data Records) supplied to Stanford are exact copies of the original DSN recordings. At Stanford, the data were digitally filtered and decimated to reduce the bandwidth and sampling rate. In the frequency domain, the processing filter has the following shape: it is flat over the central 80% of its bandwidth, and decreases as a sine wave matched for continuous slope at either end of the passband. End effects in the tme domain which result from discrete-time analysis have been removed.

The magnetic tapes supplied to the NSSDC are copies of the filtered and decimated occultation data; they consist of complex time-domain samples with supplementary information. All tapes are 9 track, 1600 bpi, odd parity, and were processed on a Data General Eclipse S250 computer.

The contents of the tapes are described briefly in the following table. Notice that tape SCRA/TITAN 8 contains only one file; all other tapes contain two files. The frequencies of the spacecraft radio signals are abbreviated as S-band (2295 MHz or 13 cm) and X-band (8415 MHz or 3.6 cm). Spacecraft names are abbreviated as V1 (Voyager 1) and V2 (Voyager 2).

Archival Data Set:

Radio Occultations of Voyagers 1 and 2 by Saturn and Titan

Tape Name	File Number	Space-craft	Planet	Event	DSN Recording Bandwidth	Radio Freq.	Initial sample time yr :day:hr:min:sec	Sampling Rate of Reduced Data, Hz
SCRA/TITAN 1	0	V1	Titan	Ingress	medium	S	1980:317: 7: 5: 0	6250.
	1	V1	Titan	Ingress	medium	S	1980:317: 7: 10: 0	6250.
SCRA/TITAN 2	0	V1	Titan	Egress	medium	S	1980:317: 7: 20: 0	6250.
	1	V1	Titan	Egress	medium	S	1980:317: 7: 25: 0	6250.
SCRA/TITAN 3	0	V1	Titan	Ingress	medium	X	1980:317: 7: 5: 0	18750.
	1	V1	Titan	Ingress	medium	X	1980:317: 7: 6: 40	18750.
SCRA/TITAN 4	0	V1	Titan	Ingress	medium	X	1980:317: 7: 8: 20	18750.
	1	V1	Titan	Ingress	medium	X	1980:317: 7: 10: 0	18750.
SCRA/TITAN 5	0	V1	Titan	Ingress	medium	X	1980:317: 7: 11: 40	18750.
	1	V1	Titan	Egress	medium	X	1980:317: 7: 20: 0	18750.
SCRA/TITAN 6	0	V1	Titan	Egress	medium	X	1980:317: 7: 21: 40	18750.
	1	V1	Titan	Egress	medium	X	1980:317: 7: 23: 20	18750.
SCRA/TITAN 7	0	V1	Titan	Egress	medium	X	1980:317: 7: 25: 0	18750.
	1	V1	Titan	Egress	medium	X	1980:317: 7: 26: 40	18750.
SCRA/TITAN 8	0	V1	Titan	Egress	medium	X	1980:317: 7: 28: 20	18750.
SCRA/SATURN 1	0	V1	Saturn	Ingress	narrow	S/X	1980:318: 2: 38: 21	625./1875.
	1	V1	Saturn	Ingress	narrow	S/X	1980:318: 2: 51: 41	625./1875.
SCRA/SATURN 2	0	V1	Saturn	Ingress	narrow	S/X	1980:318: 3: 5: 2	625./1875.
	1	V1	Saturn	Ingress	narrow	S/X	1980:318: 3: 18: 21	625./1875.
SCRA/SATURN 3	0	V1	Saturn	Ingress	narrow	S/X	1980:318: 3: 31: 42	625./1875.
	1	V1	Saturn	Ingress	narrow	S/X	1980:318: 3: 45: 1	625./1875.
SCRA/SATURN 4	0	V1	Saturn	Ingress	narrow	S/X	1980:318: 3: 58: 22	625./1875.
	1	V1	Saturn	Ingress	narrow	S/X	1980:318: 4: 11: 41	625./1875.
SCRA/SATURN 5	0	V1	Saturn	Ingress	narrow	S/X	1980:318: 4: 25: 2	625./1875.
	1	V1	Saturn	Ingress	narrow	S/X	1980:318: 4: 38: 21	625./1875.
SCRA/SATURN 6	0	V1	Saturn	Egress	medium	S	1980:318: 4: 20: 0	781.25
	1	V1	Saturn	Egress	medium	X	1980:318: 4: 26: 40	2343.75
SCRA/SATURN 7	0	V2	Saturn	Ingress	medium	S	1981:238: 5: 10: 0	781.25
	1	V2	Saturn	Egress	medium	S	1981:238: 6: 35: 0	781.25
SCRA/SATURN 8	0	V2	Saturn	Ingress	medium	X	1981:238: 5: 23: 20	2343.75
	1	V2	Saturn	Egress	medium	X	1981:238: 6: 55: 0	2343.75

84 021

-77-084A-02E -

76A-02E

The reduced data from the mediumband and narrowband systems are recorded in different formats; both are described below. The principal difference is that the S- and X-band data in the mediumband format are recorded in separate tape files, while the S- and X-band data in the narrowband format are stored in alternating groups of records within the same tape file. Following a description of the records for the two tape formats, the convention for number representation is defined.

Filtered Radio Occultation Data: Mediumband Recording System

Output Record Format

After filtering and decimation, the data from the mediumband system are stored on magnetic tapes in records each 600 complex words long. The first 88 complex words comprise a header; following the header information are 512 complex data values representing the output from the filtering and decimation process. The header is arranged as follows:

Integer word #	Mnemonic	Data type	Description
1-4	TO	D	Time of first sample in record (in microseconds from start of day)
5	TIMETAGDAYS	I	Day number of first sample in record
6		I	Number of complex samples per record
7-8	DELTIME	S	Sample period (microseconds)
9	BIN	I	First filter bin for filtering and decimation
10	DECRATIO	I	Decimation ratio
11-12	F1	S	First frequency in passband (Hz)
13-14	F2	S	Last frequency in passband (Hz)
15	RUNTIMEYEAR	I	
16	RUNTIMEMONTH	I	
17	RUNTIMEDAY	I	Date and time these data were processed
18	RUNTIMEHOUR	I	at Stanford
19	RUNTIMEMINUTE	I	
20	RUNTIMESECOND	I	
33-35	NAMEIN	I	Input tape name (ascii)
36	INPUTFILE	I	Input file number
45-48		D	Sample number of first sample read
49	TAPEPLAYNUMBER	I	Tape number from playback sequence
50	RECORDSEQNUM	I	Input tape record number (1,2,...,6000)
51	INDEXSAMPLES	I	Input record pointer (0,1,...)
52	NSAMPLES	I	Samples in input record
53	RECORDLENGTH	I	Integer words in input record (2528)
54	SPACECRAFT	I	Spacecraft number (V1 = 31, V2 = 32)
55	SOURCESTATION	I	DSS station number
60	REALTIMESOURCE	I	DRA real-time recorder 0 = recorder A 1 = recorder B
69	SOURCECHANNEL	I	Data channel played back 0 = channel 1 (S RCP) 1 = channel 2 (S LCP) 2 = channel 3 (X RCP) 3 = channel 4 (X LCP)
81-83	NAMEOUT	I	Output tape name (ascii)
84	OUTPUTFILE	I	Output file number (0,1,2,...)
85	OUTPUTRECORD	I	Output record number (0,1,2,...)

Data type:
D = double precision
S = single precision
I = integer

77-0564-02K

Filtered Radio Occultation Data: Narrowband Recording System

Output Record Format

The filtered and decimated data from the narrowband system are also stored on magnetic tapes. The first record in each file is 15 complex words long and contains descriptive information; all subsequent records are 512 complex words in length and contain data. The first data record contains S-band samples, then the next three contain X-band samples. This pattern in groups of four records is repeated for the remainder of the file: S, X, X, X, S, X, X, X, ... The first sample in an S-band record coincides with the first sample in the X-band record it precedes. After filtering and decimation, the sampling rates are exactly 625. Hz at S-band and 1875. Hz at X-band.

The header record is arranged as follows:

Integer word #	Mnemonic	Data type	Description
29	HOUR	I	
30	MINUTE	I	Time of first sample in file
31-32	SECOND	S	
33	DAY	I	
34-36	NAMEIN	I	Input tape name (ascii)
37	DECRATIO	I	Decimation ratio for filtering
39	SBIN	I	First filter bin for S-band
40	XBIN	I	First filter bin for X-band
41	RUNTIMEHOUR	I	
42	RUNTIMEMINUTE	I	
43	RUNTIMESECOND	I	Date and time these data were processed at Stanford
44	RUNTIMEMONTH	I	
45	RUNTIMEDAY	I	
46	RUNTIMEYEAR	I	

Data type: S = single precision
I = integer

Constants

A *constant* is a fixed value that does not change during program execution. The value of a constant can be arithmetic or logical, or the constant can be a character string.

See the PARAMETER statement in Chapter 7 for information on assigning a symbolic name to a constant.

Integer Constants

An *integer constant* is an optionally-signed whole number. It may have a positive, negative, or zero value. If you do not specify an explicit sign, the constant is positive.

An integer constant may contain only the digits 0 through 9 and an optional sign. Leading zeros and interspersed blanks have no effect on the value of the constant.

FORTRAN 5 stores an integer in two's complement form, using one full 16-bit word. The allowable range is -2**15 to +2**15-1 (-32,768 to 32,767 decimal). (If the integer is outside this range, FORTRAN 5 stores it as a real constant.) An integer's internal representation is shown in Figure 2-1.

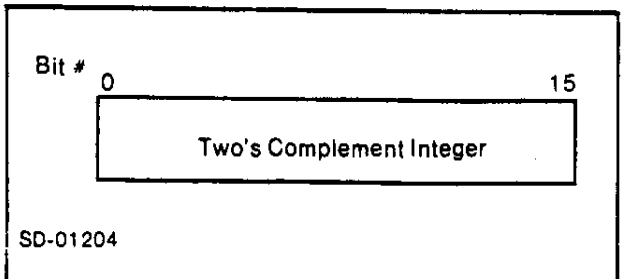


Figure 2-1. Internal Representation of an Integer

Examples:

Valid	Invalid
-125	12.5
0	66,391
+4525	+33333
91	

Octal Constants

An *octal constant* (an alternative way of representing an integer) consists of a string of digits followed by the letter K. It must be in the range 0 to 177777 inclusive.

You may not sign an octal constant. It may contain only the digits 0 through 7 and the letter K.

Examples:

Valid	Invalid
10K	-10K
777K	77.7K
1K	89K

Real Constants

A *basic real constant* is an optionally-signed string of decimal digits with a decimal point. You may place the decimal point anywhere in the decimal string. A basic real constant may have a positive, negative, or zero value.

A *real constant* can be a basic real constant, a basic real constant followed by a real exponent, or an integer constant followed by a real exponent.

A *real exponent* is the letter E, followed by an optionally-signed integer constant. You must specify the constant preceding the letter E, even if it is 1 (for example, 1E-04). The integer constant following the E may be explicitly 0, but may not be blank.

A *real constant* may contain only the numbers 0 through 9, the letter E, and the symbols -- period (.), plus (+), and minus (-).

FORTRAN 5 stores a single precision real number in two memory words, with the high-order word preceding the low-order word. It must be in the range 5.4 x 10**-79 to 7.2 x 10**-75. It has the significance of 6 hexadecimal digits (approximately 7.2 decimal digits). Its internal representation is shown in Figure 2-2.

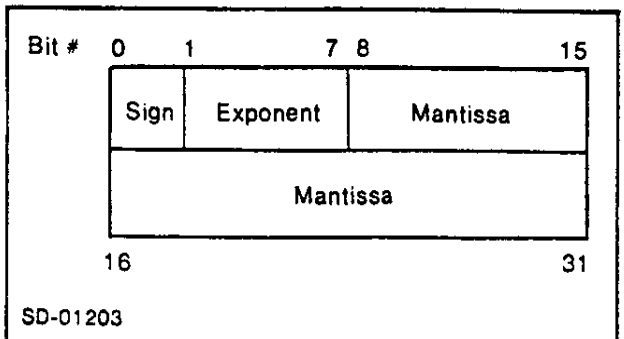


Figure 2-2. Internal Representation of a Real Number

Bits 1 through 7 in Figure 2-2 contain the exponent. This is the power to which 16 must be raised in order to give the correct value to the number. FORTRAN 5 uses *Excess 64* representation so that the exponent field may include negative and positive exponents. This means that the value in the exponent field is 64 greater than the true value of the exponent. If the exponent field is zero, the true value of the exponent is -64. If the exponent field is 64, the true value of the exponent is zero. If the exponent field is 127, the true value of the exponent is 63.

Bits 8 through 31 in Figure 2-2 contain the mantissa which is in true form. It is a binary fraction with a hexadecimal point implied immediately to the left of bit 8. The mantissa is always hexadecimally normalized (left-justified).

Examples:

Valid	**Invalid**
+.005678	$45.67
15.E-04	9,876.53
-005E2	-65.4E

Double Precision Constants

A *double precision constant* is a basic real constant or an integer constant followed by a double precision exponent. It may have a positive, negative, or zero value.

A *double precision exponent* is the letter D, followed by an optionally-signed integer constant. You must specify the constant preceding the letter D, even if it is 1 (for example, 1D+03). The integer constant following the D may be explicitly 0, but may not be blank.

FORTRAN 5 stores a double precision number in four words, and stores the sign and exponent in the same manner as real numbers. A double precision constant has the significance of 14 hexadecimal digits (approximately 16.8 decimal digits). Its internal representation is shown in Figure 2-3.

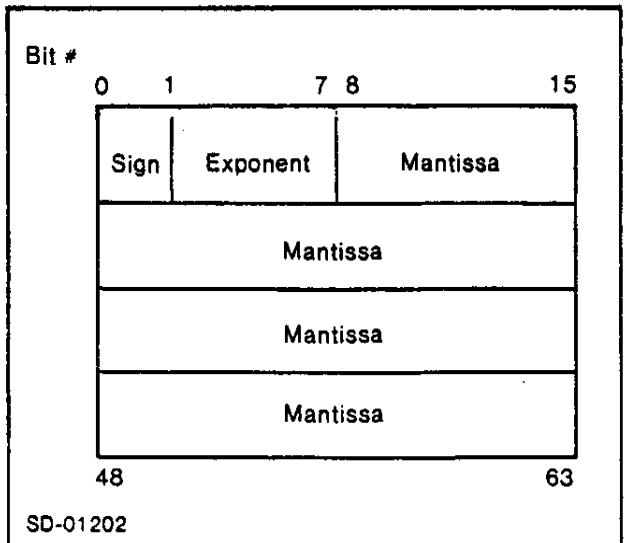


Figure 2-3. Internal Representation of a Double Precision Number

Examples:

-21987D0
5.0D-3
+.203D+15

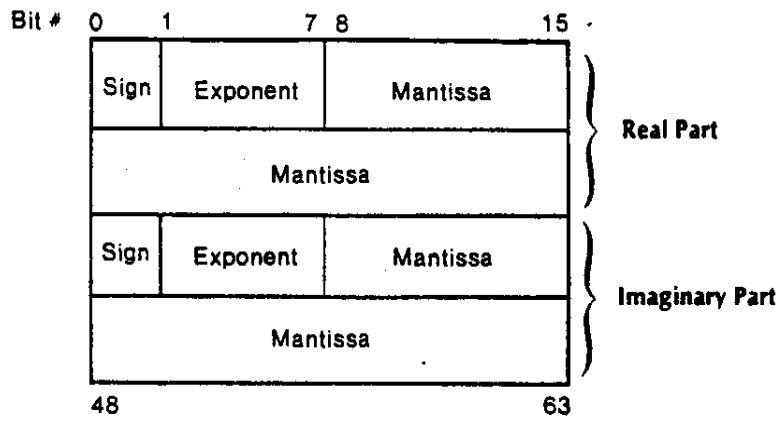
Complex Constants

A *complex constant* consists of a left parenthesis followed by an ordered pair of real constants separated by a comma, followed by a right parenthesis. The first real constant is the real part of the complex constant and the second is the imaginary part.

FORTRAN 5 stores a complex constant as two real constants, thus requiring four words. It stores the real part in the first two words and the imaginary part in the second two words. The internal representation is shown in Figure 2-4.

Examples:

(3.2,1.86)
(2.1,0.0)
(5.0E3,-2.12)



SD-01201

Figure 2-4. Internal Representation of a Complex Constant

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D-59815
August 26, 198.
77-076A-02E

DUMP OF TAPE DOUT1

INPUT TAPE DOUT1 ON TU0
DATA INPUT H9 NF 2 FL 1 1 1 SR 2 1 1 SR 2 LAST 1

FILE 1 RECORD 1 LENGTH 238 4800BYTES

(0)	49454A83	0FFFFFFF	00EE0200	43500000	00E10040	44563650	44594390	00520007	000D000F	0034002E
(40)	00000000	00000000	00000000	00000000	00000000	00000000	43335352	30310000	00000000	00000000
(80)	00000000	00000000	443C8100	00000000	00010004	03E91388	09E00020	002B0021	00010000	00000001
(120)	00000001	00000002	00000005	00000000	000C01CC	00CE0017	0034C000	00000000	00000000	00000000
(160)	43335352	30300000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(200)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(240)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(280)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(320)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(360)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(400)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(440)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(480)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(520)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(560)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(600)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(640)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(680)	00000000	00000000	00000000	00000000	00000000	00000000	C216EEA2	C143E5F8	4212F2B1	C13EB4A5
(720)	C1D872F0	41F5751E	417ACCB1	C210DCB3	40BA7F50	421521BA	C1D61DAF	C2162701	421017EC	41B34A84
(760)	C210561B	C1766350	4215A9D4	C1915715	C212F8FB	4210B6FC	416EED68	C1F2CED6	4123B61E	4215A81C
(800)	C1A54947	C1F843CD	4210408E	41ED78AA	C21689E0	C1482262	42159BCF	C14F41CF	C1986E02	4210E5DF
(840)	4161A128	C219DBDE	411293F8	42112D44	C1C0CB45	C1CF485B	42107FFE	4199E154	C21107BB	415E16A3
(880)	4212D24C	C1E2CE7F	C1B06FDD	41BADCCA	4128FFE3	C214C9E1	418E541E	4210B31F	C1F82A74	C188CA70
(920)	42113A62	41698C29	C215EC38	411FD31D	419CDEA7	C1B58EE1	C119914E	4213B7F4	C12C28C6	C212A7CB
(960)	41C25C27	41FE4237	C1FE4D83	C1853888	42122846	4C6C1740	C2127EF6	41B8D5D6	41EBC168	C1AC1245
(1000)	C12E3FF6	41FAA8D1	C134B176	C21431DE	415AB323	41CE6304	C211B7C2	C19D1BF9	4212E0F7	4082CF10
(1040)	C2104E23	41863BE9	41E184B8	C212FC88	C17EEFC0	4210CFE2	40533D10	C21281DD	41C99A16	41F8A5DD
(1080)	C213A396	C1793BE1	42112CEE	4133FB1C	C21CB523	419F8E92	41A1426C	C1D089C6	C113FEAD	4211974C
(1120)	C16D61BB	C1FDFBC3	4211BFBB	41A536F8	C2103F93	4C3E02A0	4210138D	C185130E	C210C373	41682B67
(1160)	41B46EED	C1EB38CB	C152E702	41A8EFA8	C17CD178	C1A1588C	41CE18A6	41C831DC	C1C5C295	C131D697
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(1240)	4212D4C7	418ABD94	C2135B96	C181AE36	41A4A442	C17ED195	C1C51697	421254AB	41813869	C2125AD9
(1280)	41DAA67A	4213C28E	C1B50701	C1B922E4	41FBAD76	4140D921	C21673BF	4114DF2B	421042C9	C15E2612
(1320)	C1C514B5	41C38012	41393CC0	C212B540	C04853C0	41FCE541	C1802A58	C1CB419B	4215A148	41A14C57
(1360)	C216C247	401202A0	421EC1C6	C18A8DC9	C1AF9426	42109419	412D69FC	C212DB63	4121AFC5	42136169
(1400)	C2130128	C1F65875	41FD7553	40BE9E60	C21CD357	4163FD90	42105AF9	C1B1B7B4	C17B8259	41C46126
(1440)	4130D085	C2107251	4189B793	42100188	C1FB65AE	C1934615	42123801	414C9F18	C2108719	414D77FE
(1480)	41E02667	C1C325CB	C16B863F	4211371B	C0B9FE00	C2135C30	41C0A193	42129EA1	C214DE46	C1CB6B23
(1520)	42135143	413277F8	C1FA2C06	418815C8	41A7D259	C1DAFEA6	C1488D6B	421143B6	C1554B0A	C2135C7D
(1560)	4211A484	41C9733C	C2138B7C	C19042F4	41FE3182	411EDC1D	C211C798	41A9839B	41A71321	C2139A31
(1600)	41317046	42106444	C19C612B	C1A9BF44	4211D43D	41C134C7	C1EB919A	C18ACFEF	41C3F5F3	C1105E71
(1640)	C2118989	41BC29D3	41CE3299	C1DFD0CC	C12E4CDC	42141044	C19F96DC	C2118EAA	4210C64B	4175015C
(1680)	C2134BB0	411D2C5E	41E4086F	C195A809	C17F5A30	41B310E3	41A8469F	C218FE87	C12473CB	42122515
(1720)	C19CC54C	C1E2D7B5	41F260D8	41AC9FF1	C212F15E	4124EC73	41EE44BC	C133C7CD	C19AFA82	41D19D33
(1760)	41260A53	C21C3980	416B3AE1	41F10A40	C21C17D3	C210F306	42121378	4175F7D1	C211AB0E	411EF040
(1800)	42114331	C1A8B316	C1CA1B72	41F9FE37	413CBBA8	C210595F	41895F4C	4212BAA9	C19BB804	C1846C28
(1840)	42140447	C11A24FD	C21699E4	415EB33F	41C17AE2	C1D8EC18	C1A01C46	4214EFC3	C1328686	C2139625
(1880)	41BD3484	41F6B94E	C1F70336	C1977805	4216E550	412E58F9	C212644E	412F99AD	41BB68BA	C1FA0A5C
(1920)	C184D85A	42120DC2	3FE5D8C0	C2103DF9	4165C4AB	421067CA	C1C8A99E	C1C08B2B	4212CD8A	413E1C1C
(1960)	C1DBE0F7	417200E8	419F3E61	C1E1DFC3	C16730F5	421010E9	C12063BC	C211572E	42141619	421152FF
(2000)	C1EF49E0	C17E6C10	41C83125	C01B7130	C1F7F1B2	417885F1	418526F1	C1E4E477	C15A3253	4211B47B
(2040)	C1727A3C	C213E756	42109FE6	41E05895	C21261AD	C116B62F	4212C00C	C16972D7	C210081A	41A984DB
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(2160)	421C0FAA	41EE0B70	C1D79A61	4127DCDA	41B35F7E	C1734B08	C1E175D5	41A3EB6F	4180DE78	C1D33604
(2200)	413C387F	42136071	C1A5856F	C21140A9	41EEE03C	4166C0E5	C1FB35C6	C12862B0	41F01C33	C1E44080
(2240)	C1D67F45	41CD6436	414283B2	C1E09D66	41367DC5	421431A0	C1A17E4C	C1B85EE3	4210936D	414C7321
(2280)	C2131447	40B2BD60	42100F06	C170F50F	C1990EC3	42125EF7	40B72070	C2145EA2	415FE59A	421098E0

(2960)	4144C3F3	411E0D95	C0486E20	C09B3C90	4028739B	C134B088	C126B183	4116B154	C0B76D3C	C11C6C53
(3000)	C11EC24A	C126EEB7	C112E41E	4123E8A0	4142C53A	411D3681	C0E53630	4130EB78	4123EE18	403803F7
(3040)	C1524F51	C13E5A35	41281F43	C13140A4	4124AC10	411223D4	40389DAF	C03D40B1	411AECC8	412E0F27
(3080)	C1944066	40852690	4139816B	C1448A8B	C12C45D7	413EB45B	4128AD09	C1289151	41215665	C0EF2DF5
(3120)	40B5B8C0	C0FADC80	411CF2B5	418052DE	C06A81EE	412CF032	C12DC12D	C11A9ACD	41461B80	4122EF3C
(3160)	C0557AE3	C15FDF9A	C146EE3A	C1150144	C14079F3	3F657E00	4138E027	40AF30C0	40CAEC0B	40BFC502
(3200)	C0292420	C1337D6A	41151D77	C116B7D9	411015D5	C07E8559	C09D27C5	C1140149	4060DD1E	41408E18
(3240)	C14826A8	C1172D35	4116AC4E	C1371E74	409147 6A	418199C7	411F65BF	C06A1B3D	C0391209	C1403263
(3280)	41428497	41403086	4016DFDA	4075A7B0	C1191434	40CB9C00	C12B1613	C1401446	C15EC30F	412F23AB
(3320)	4018DEE4	407B6A50	C148046F	C12A8102	41B8F5CD	4132FCB6	4135176B	411EF55E	408238DA	C11BF44F
(3360)	C0316602	40799DF9	C1398EF8	C12B7845	C17D47F8	C139D7FE	C0B7580B	C127106D	412990D8	412C40C5
(3400)	41376552	41126E9F	C0E7A820	C11BDEE3	4061E341	41470D12	403C87C0	C1277C67	403E26A0	C12C0239
(3440)	412770D2	41299F1A	C12F7CC4	BFA07E90	41253BC6	C11C6E58	412D6F01	413646D4	40AAD621	40E9DEF4
(3480)	C02F70AC	C14B59CE	C12E8E07	407C8620	C1143157	4134B61F	4114D83F	41178DCB	C11D0EC7	C09E6110
(3520)	C11EE7CD	C04DB610	C0EAD75B	C115D5E4	4125D81C	C1129C11	4110BDB7	C12A72CA	411A9B57	416E3E78
(3560)	C1631A02	C12D18F7	411E6E6C	C09E5670	40458BE7	4136D0A5	C1143BC9	C0F162C1	C08587C5	C11938FB
(3600)	4142E23D	41545C1A	411166A1	C159DE67	C111A294	4115954A	BF69FC40	412D68D6	40363840	C0CC5295
(3640)	411CC0A3	C12CCA47	40E828D0	C0928D25	411955BF	C13F2EDD	41133F16	41331F6B	C12D288A	C1396CCB
(3680)	C0AB286A	C113D7CF	C12B26DA	414F72C1	BFCFAB00	411CD257	C026FF30	C0F9AC57	402002D0	C1383A82
(3720)	402C7310	41246FDD	403E88CD	C111E331	C0CD0BE0	41239FB7	407AE640	40DC6B1E	C120727D	C12EBF67
(3760)	402C45B8	C1587918	C12CF40B	41186BC5	412CCF1A	413DB4B7	4021C7C7	4137B39B	412A76C6	414E8E9D
(3800)	412CA14C	413154E4	C11196F7	C1102B33	4127961F	C173EA85	C1103E8C	C12AD2D2	C12324AE	C07F981B
(3840)	C1131E68	C1231CB3	C0DA8185	409163D0	C13C79FD	4140E43E	413EDE7D	4127C589	4013FC5B	C116A8AD
(3880)	4093B914	C118D6DE	413E8548	C117527D	40A0DDD0	40ED58D0	C1265CF9	4030D590	4143C2AD	41129121
(3920)	4C6085EB	4159BD9B	C12A5529	C128499D	C13AA0AA	C1661C41	412A3A28	401137F0	C14D8FDE	4115C126
(3960)	4121CEE5	4048743F	C137DE44	C11F5C0D	C14D2947	411119DB	40C81D28	C1135725	413B889D	411E0AC0
(4000)	41301F29	4120658A	41306FDF	C01E0390	416B01F3	4123B151	C16ECD14	C1383608	406B76C0	412C5693
(4040)	C11DB8F0	404D3C9F	C08B9D60	C1306DFF	C01370B0	41281872	C113A88F	C0AA8F77	4048EC16	C0F06D1D
(4080)	4118C7C1	4113CC2D	C11E9719	C11BE389	415AE7BD	4C5888BA	C0595470	C1324788	C0301542	C088809B
(4120)	4029D650	41132791	C0256650	C075E985	C125C72D	412B7771	C12427A0	C11FC38E	C140CD8C	413ABE5C
(4160)	412720DA	4112BAE5	411592E5	411FC64C	413F8C92	412DCEC0	3F261D00	C1347552	C029F8D0	C14936DE
(4200)	411F4F59	C12020C5	C137DC7D	C1274AAF	C143E1BC	41113755	C11EA48B	40D2A8E6	40A1B330	C122E778
(4240)	41426A50	414D0241	414EC276	C13D65F7	C126424C	402A114D	411F7795	414E2D36	C11AD458	415D9017
(4280)	C118CA40	4110C145	C13074CC	C198A1A2	C116227D	C029D690	413C543F	C11CBE8A	4142A5AA	41350921
(4320)	C12E3D2E	C127B3B9	C1233B52	C06AF9C0	C11D4778	41497A3D	412D3A4C	412210CB	C121E88D	41151398
(4360)	411AE931	C14362F1	4114BC30	402C9D9F	41286746	CC4EDDF0	C124FBC3	C11D0589	411A53C8	41141E68
(4400)	C0852B8E	4120D107	BF7859B0	C099A590	BFC8DCC0	C1292741	40D5A6DB	C12739E4	406E72F0	413B28DB
(4440)	C12C004D	C0F6F88A	40F6126D	4122B741	C1359330	C09F2C9F	C11636A0	C146AFC2	412A5C76	C076DD64
(4480)	C14CC93E	40B16367	4122F45F	41321E0E	40122CC0	4147745A	4110BBF8	C1614A65	40F7DE07	40577961
(4520)	411E11D4	40752FE0	C0A34344	C14853D1	41428D03	C1284485	C1192629	41420A97	4130364C	41940151
(4560)	C154F71E	C057C8F2	C1197089	411BC256	402D7078	411EC28C	40357DCB	C126D313	4167104A	C125E744
(4600)	C11E18E3	C11124C9	C0C5BD30	C1214599	C15FC029	C0E0E8F5	413DA77D	4057F203	41316FDE	C14122AC
(4640)	C11CF72E	40920F8E	C1973ABB	C15501ED	40D169E0	4124B3CE	BF8CF500	41320DBB	C11F4E5B	4140959F
(4680)	C0E8C3C7	40984F90	4125EFFF	41688A09	413F4C57	40526C53	4045232B	C15A2792	C03991A0	C1101953
(4720)	40AF69F0	40A2D480	4123BD18	C07E56A2	C123A8DE	41107781	413103E9	C13F81D1	C058884F	411AF644
(4760)	4CD780FE	C135AD2F	40386072	C02A4ED3	C13B2397	411A781A	C11077CF	411CFD89	C0AA18C0	C1186AA0

FILE 2 RECORD 3661 LENGTH 238 4800BYTES

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