#491

VOYAGER 1 & 2
MERGED OCCULTATION DATA
77-076A-02B
77-084A-02B

VOYAGER 1 & 2

MERGED OCCULTATION DATA

77-084A-02B

77-076A-02B

These data sets have been restored. There was originally one 9-track, 1600 BPI tape written in ASCII. 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 an IBM 360 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
DR005500	DS005500	D042428	1 - 8	03/05/79 - 07/10/79

REQ. AGENT	RAND NO.	ACQ. AGENT
DEW	V0078	WSC

VOYAGER 1 & 2

MERGED OCCULATION DATA

77-084A-02B

77-076A-02B

This data set consists of 1 data tape. The tape is 9 track, 800 BPI, ASCII formatted with 8 files. This tape was created on a Data General Eclipse S/250 computer.

D#	C#	TIME SPAN
D-42428	C-21303	03/05/79 - 07/10/79

JET RPOPULSION LABORATORY

INTEROFFICE MEMORANDUM
Voyager-HBH-80-8

September 29, 1980

TO: Gordon E. Wood

FROM: Henry B. Hotz

SUBJECT: NSSDC TAPE

This tape consists of 80-character logical records blocked 9 per physical record. The last physical record is padded with blanks to be the same size as the other records. ASCII characters are used with the 8th bit set to zero. The only control information is a file mark (tape mark) written after each file. The recording format is 9-track at ~~1600~~ 800 bytes per inch.

There are two file types, one containing trajectory information and the other radio frequency information. In order, the 8 files on the tape are:

Voyager 1	entry	Trajectory
	entry	RF
	exit	Trajectory
	exit	RF
Voyager 2	entry	Trajectory
	entry	RF
	exit	Trajectory
	exit	RF

The trajectory file consists of three header records followed by data records consisting of five records per time tag as follows:

ITEM	RECORD	DESCRIPTION	FORTRAN FORMAT CODE
1	1	Number of time points in file	I10
2	1	Spacecraft number (31=Voyager 1, 32=Voyager 2)	I10
3	1	Not used	I10
4	1	1=entry, 2=exit	I10
1	2	Not used	D24.16
2	2	Ephimeris time minus Civil Universal time (sec)	D24.16
3	2	Approximate one way light time (sec)	D24.16
1-3	3	Position of sun (x, y, z) (km)	3D24.16
1	4	Ephimeris time of the following vectors in seconds from 1950.0	7X, D20.14
2-6	4	Same as above, but as year, day, hour, min, sec	3X, 4F7.1, F14.8
1-3	5	Spacecraft position (km)	3D24.16
1-3	6	Spacecraft velocity (km/sec)	3D24.16
1-3	7	Position of earth (km)	3D24.16
1-3	8	Velocity of earth (km/sec)	3D24.16
--	9 to 5*(Number of time points in file)+3	repeat of 4-8 above	

All poisition and velocity vectors are Jupiter-centered in the earth-mean-equator of 1950 coordinate system.

The radio frequency file consists of 4 header records followed by data records consisting of two records per time tag as follows:

ITEM	RECORD	DESCRIPTION	FORTRAN FORMAT CODE
1-4	1	Same as first record in trajectory file	4I10
1	2	Not used	I10
2	2	Receiving DS station number	I10
3	2	"1" indicating spacecraft is using on-board oscillator	I10
4	2	"3" indicating that both S and X-band data are present	I10
1	3	Not used	D26.18
2	3	Spacecraft oscillator frequency (Hz)	D26.18
1-2	4	Not used	2D26.18
1	5	Last two digits of year	I2
2	5	Day of year	I5
3	5	Seconds past midnight	F12.4
4	5	S-band received frequency (Hz)	D26.18
5	5	S-band residual frequency (Hz)	D26.18
1	6	S-band received power (dB)	F9.4
2	6	X-band received power (dB)	F10.4
3	6	X-band recieved frequency (Hz)	D26.18
3	6	X-band residual frequency (Hz)	D26.18
--	7 to 4+(2* number of points in file)	repeat of 5-6 above	

Successive records will not have times which are less than those preceding, but will not be uniformly spaced. Frequency data which came from the closed-loop tracking system may be distinguished from open-loop by zeros for the corresponding received power.

HBH:ms

DUMP OF TAPE D42428

INPUT TAPE D42428 ON MT2
DATA INPUT H9 NF 8 SR 1 4 1 SR 1 LAST 1 SR 8 5 1 SR 3 LAST 1

19390230 2324 4508 +001 -.196324379667

FILE 1 RECORD 4 LENGTH 720BYTES

(0)	20202D2E	31393339	30323330	32333234	34353038	2B303031	20202D2E	31393633	32343337	39363637
(40)	33343034	2B303032	20202D2E	38383033	31303930	35373830	38303935	2B303031	20202020	20202020
(80)	20202020	20202D2E	39323036	34353135	30303030	30302B30	30392020	20202020	2037392E	30202020
(120)	35342E30	20202031	342E3020	20203435	2E302020	2035302E	30303030	30303030	20202020	20202020
(160)	20202D2E	36313737	39343033	34383635	36313538	2B303035	2020202E	33373233	39343232	35313835
(200)	38383839	2B303036	20202D2E	31353036	35303938	33353335	33383130	2B303036	20202020	20202020
(240)	20202D2E	32363234	33343630	33333537	32393535	2B303032	2020202E	35393132	37333333	34373131
(280)	31393635	2B303031	20202D2E	34303432	35353634	31313139	35383939	2B303031	20202020	20202020
(320)	20202D2E	33333139	33333637	31313731	34333032	2B303039	20202D2E	35343032	36353335	31383832
(360)	38333537	2B303039	20202D2E	32343331	39393531	38323237	35323733	2B303039	20202020	20202020
(400)	2020202E	31393339	30383034	36353536	30323934	2B303031	20202D2E	31393633	32343531	33383338
(440)	34343433	2B303032	20202D2E	38383033	31313439	32383530	30303634	2B303031	20202020	20202020
(480)	20202020	20202D2E	39323036	34353136	30303030	30302B30	30392020	20202020	2037392E	30202020
(520)	36342E30	20202031	342E3020	20203436	2E302020	2020202E	30303030	30303030	20202020	20202020
(560)	20202D2E	35323034	31383332	33393433	30393139	2B303035	2020202E	33373234	35333331	37343039
(600)	32323030	2B303036	20202D2E	31353036	39313339	35313530	33333939	2B303036	20202020	20202020
(640)	20202D2E	32363234	32333230	35333433	31343636	2B303032	2020202E	35393035	37313135	37323631
(680)	34373930	2B303031	20202D2E	34303339	37363636	39393737	37353832	2B303031	20202020	20202020

3319470876340616+009 -.540400876287902 9+009 -.243259833534972 0+009 .19781472260 +001 -.196418147511 8

FILE 1 RECORD 385 LENGTH 720BYTES

(0)	2020202E	33333139	34373038	37363334	30363136	2B303039	20202D2E	35343034	30303837	36323837
(40)	39303239	2B303039	20202D2E	32343332	35393833	33353334	39373230	2B303039	20202020	20202020
(80)	20202020	31393733	31343732	32363030	32343030	2B303031	20202D2E	31393634	31383134	37353131
(120)	33353638	2B303032	20202D2E	38383037	31383739	36393030	37373430	2B303031	20202020	20202020
(160)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(200)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(240)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(280)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(320)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(360)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(400)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(440)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(480)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(520)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(560)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(600)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(640)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020
(680)	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020	20202020

FILE	INPUT RECS.	DATA RECORDS INPUT	MAX. SIZE	READ ERROR SUMMARY PERM	ZERO B	SHORT	UNDEF.	INPUT RETRIES #RECS.	TOTAL#
1	385	386	720	0	0	0	0	0	0

79 50 10 51, 5000

FILE 3 RECORD 1 9 15 LENGTH 720BYTES

(0)	37392020	31393120	20383130	35312E35	30303020	20202E32	32393633	30333934	39373333	34333238
(40)	35283031	30202020	2E363037	37393637	32363037	37373935	3032382B	30303220	20202020	20202020
(80)	20202020	2E303030	30202020	20202E30	30303020	20202E38	34313937	38313135	31393137	33363439
(120)	37283031	30202020	2E323235	37353335	37373332	31373637	3830372B	30303320	20202020	20202020
(160)	37392020	31393120	20383130	35342E35	30303020	20202E32	32393633	30333935	30333934	34333238
(200)	38283031	30202020	2E363034	38353237	36333435	31363335	3833372B	30303220	20202020	20202020
(240)	20202020	2E303030	30202020	20202E30	30303020	20202E38	34313937	38313135	36303534	33363439
(280)	34283031	30202020	2E323236	33383734	35373636	31333330	3730302B	30303320	20202020	20202020
(320)	37392020	31393120	20383130	35372E35	30303020	20202E32	32393633	30333935	32333936	37363632
(360)	31283031	30202020	2E363135	33323235	34363838	34343137	3533342B	30303220	20202020	20202020
(400)	20202020	2E303030	30202020	20202E30	30303020	20202E38	34313937	38313136	30323033	33363439
(440)	33283031	30202020	2E323237	30333334	38393337	36333036	3533332B	30303320	20202020	20202020
(480)	37392020	31393120	20383130	36302E35	30303020	20202E32	32393633	30333935	32373231	37363632
(520)	30283031	30202020	2E363039	30313934	30393536	37313137	3639312B	30303220	20202020	20202020

```
(    560)   20202020  2E303030  30202020  20202E30  30303020  20202E38  34313937  38313136  34333936  33363439
(    600)   332B3031  30202020  2E323237  37323336  37323339  37343334  3731312B  30303320  20202020  20202020
(    640)   37392020  31393120  20383130  36332E35  30303020  20202E32  32393633  30333935  34343434  34333238
(    680)   372B3031  30202020  2E363136  36393333  35313330  36303231  3231332B  30303220  20202020  20202020

FILE        87 RECORD   1 9401  LENGTH      720BYTES
(      0)   37392020  31393120  20383633  39392E35  30303020  20202E32  32393633  30353535  36313338  30393935
(     40)   332B3031  30202020  2E333732  35323930  32393834  36313931  3430362D  30303820  20202020  20202020
(     80)   20202020  2E303030  30202020  20202E30  30303020  20202E38  34313937  38373033  39313932  30333136
(    120)   332B3031  30202020  2E313930  30303034  35393535  31383131  3231382D  30303120  20202020  20202020
(    160)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    200)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    240)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    280)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    320)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    360)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    400)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    440)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    480)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    520)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    560)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    600)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    640)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020
(    680)   20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020  20202020

        FILE    INPUT     DATA RECORDS     MAX.          READ ERROR SUMMARY          INPUT RETRIES
                RECS.        INPUT         SIZE       PERM  ZERO B   SHORT  UNDEF.  #RECS.  TOTAL#
           8      401       402             720         0       0       0       0       0       0

EOJ          DUMP STOPPED AFTER FILE   8          # OF PERMANENT READ ERRORS   0

START TIME 01/23/81  14:10:01          STOP TIME 01/23/81  14:11:53
```

Ascii List of Trajectory
Files 1,3,5,7 Record 4
3/5/79 - 7/10/79

```
$NOP
$NOP
$NOP      ******    X-395    ******
$EXE TFLIST US

INPUT PARAMETERS ARE:  AS SR=4=1 7

 TAPE NO.   1              FILE NO.   1
 RECORD   4                LENGTH   720
   .193902302324450+001  -.1963243796673404+002  -.8803109057808095+001                .92064515000
000+009        79.0   64.0   14.0   45.0   50.00000000          -.6177940348656158+005   .3723942251
858889+006   .1506509835353810+006          -.2624346033572955+002   .5912733347110965+001   .40425
56411195899+001            .3319336711714302+009  -.5402663618828357+009  -.2431995182275273+009
      .193908046556029 4+001  -.1963245138384443+002  -.8803114928500064+001                .9206451
6000000+009        79.0   64.0   14.0   46.0      .00000000          -.6204183239430919+005   .372453
3174092200+006   .1506913951503399+006          -.2624232053431466+002   .5905711572614790+001   .4
0397666997775 2+001

 TAPE NO.   1              FILE NO.   2
 RECORD   4                LENGTH   720
    .0000      .0000   .841396144549169677+010  -.116134330630302429+000          79   64  57612.5000
   .229471676287519002+010  -.516576059162616730-001              .0000      .0000   .841396146380769
678+010  -.257411181926727295+000          79   64  57613.5000   .229471676786319004+010  -.97290210
4258537292-001              .0000      .0000   .841396148219869678+010  -.323064111173152924+000
    79   64  57614.5000   .229471677292619003+010  -.677526853978633881-001              .0000      .
0000   .841396150077669680+010  -.201093137264251709+000          79   64  57615.5000   .22947167779
7619004+010  -.510449856519699097-001              .0000      .0000   .841396151913469679+010  -.2984
98287796974182+000

 TAPE NO.   1              FILE NO.   3
 RECORD   4                LENGTH   720
   .196736170385066 0+001  -.1963923871009666+002  -.8806067610469159+001                .92065012000
 00+009        79.0   64.0   16.0    8.0   40.00000000          -.1901287974066081+006   .3939749246
891138+006   .157647937950486 8+006          -.2530449706887848+002   .2951406552831126+001   .28516
6097818217 7+001            .331943378803864 8+009  -.5403639520837464+009  -.2432432770686874+009
      .1967417816827267+001  -.1963925220229277+002  -.8806073466670944+001                .9206501
3000000+009        79.0   64.0   16.0    8.0   50.00000000          -.1903818305813545+006   .394004
4143838560+006   .1676764442273249+006          -.2530213747830036+002   .2946531616252313+001   .2
849593997341849+001

 TAPE NO.   1              FILE NO.   4
 RECORD   4                LENGTH   720
 -24.6610  -43.4645   .841409113043929881+010   .1509382854621857 40+005          79   64  65313.2850
   .229475212872810652+010   .410444218573719263+004          -28.2090  -43.4207   .841409110988299
306+010   .150501972835436463+005          79   64  65315.2850   .229475211484465876+010   .40922741
6305616497+004          -23.6320  -43.3768   .841409108932668731+010   .150065682030841708+005
    79   64  65317.2850   .229475210961462648+010   .408075287046283483+004          -33.2390  -43.
3329   .841409106877038157+010   .149629439428672194+005          79   64  65321.2850   .22947520978
7519446+010   .485642919779941439+004          -32.5100  -43.2452   .841409102765777009+010   .1487
568911568820 40+005

 TAPE NO.   1              FILE NO.   5
 RECORD   4                LENGTH   720
   .369745756517127 2+002   .164423591389548 9+002   .6870454674527843+001                .93163474000
000+009        79.0  191.0   19.0   25.0   40.00000000          -.8309584120350827+006   .9476763585
155050+006   .357960220747686 4+006          -.1572298238170129+002   .1233543835453664+001   .14685
1165895722 8+001            .628812795545840 8+009  -.6277842473760110+009  -.2841813425206931+009
      .369745380535577 5+002   .164424607389644 8+002   .6870498797825881+001                .9316347
0000000+009        79.0  191.0   19.0   26.0      .00000000          -.8312728623229154+006   .947701
0187088621+006   .357929586944932 6+006          -.1572204642294208+002   .1232475587375471+001   .1
468108094794931+001

 TAPE NO.   1              FILE NO.   6
 RECORD   4                LENGTH   720
    .0000      .0000   .841977135130369828+010  -.493210628628730774-001          79  191  73537.5000
   .229630127878376620+010  -.211135149002075195-001              .0000      .0000   .841977135558003
```