#392

AE-C,E

EUV ABSORPTION DATA

73-101A-06B

75-107A-06B

AE-C

EUV ABSORPTION DATA, TAPE

73-101A-06B

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 930 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 |
|---|---|---|---|---|
| DR004808 | DS004808 | D029636 | 1 - 9 | 02/01/74 - 02/28/74 |

AE-C

FILE 1 OF D-29636

M1-101A-06B

```
NAME=*FEB74

11*FEB74' START OF FILE ***********************************************
*                                                                      *
*                                                                      *
*                                                                      *
*                                                                      *
*    EUV ABSORPTION RESULTS FOR FEBRUARY 1974                          *
*    ****************************************                          *
*                                                                      *
*    FROM OBSERVATIONS BY EUVS EXPERIMENT ON AE-C                      *
*                                                                      *
*    PRINCIPAL INVESTIGATOR: H.E.HINTEREGGER                           *
*                                                                      *
*                                                                      *
*  FILES '*FEB74'=*FEB74:4 PREPARED FOR NSSDC (AND WDC-A);             *
*        RELEASED FOR PUBLIC USE BY EXPERIMENTER 15 JAN 77             *
*  (RECORDS OF ALL FILES ON NSSDC TAPE CORRESPOND TO ONE               *
*   PRINTABLE LINE OF NO MORE THAN 128 CHARACTERS PER RECORD)          *
*                                                                      *
************************************************************************
*                                                                      *
*      TABLE OF CONTENTS                                               *
*      *****************                                               *
*                                                                      *
* '*FEB74' INTRODUCTION AND REFERENCES                                 *
*  ******                                                              *
*  PAGE 2    EXPERIMENT GOALS AND INSTRUMENT PERFORMANCE               *
*       3    FINAL RESULTS ON EUV FLUXES FOR 1974                      *
*       3    PUBLISHED PRELIMINARY RESULTS ON ABSORPTION               *
*       3    ABSORPTION RESULTS OF PRESENT NSSDC SUBMISSION            *
*       4    REFERENCES                                                *
*       5    "GU FILES" OF EUVS ABSORPTION DATA                        *
*       6    TABLE OF STANDARD WAVELENGTH GROUPS IN ABOVE              *
*       7    ABSORPTION-DATA ANALYSIS LEVELS AND ACCESS                *
*       8    ADVISORY NOTES                                            *
*      10    HISTORY OF CREATION OF PRESENT DATA AND COPIES            *
*            OF PROCESS-CONTROLLING REFERENCE FILES                    *
*      10    PROGRAMS CREATING "RESULT OUTPUTS"                        *
*      12    REFERENCE FILE USED TO CREATE "GU" FLE RECORDS            *
*      13    REFERENCE FILE USED TO CREATE PRESENT '*FEB74:1'          *
*      14    REFERENCE FILE USED TO CREATE PRESENT '*FEB74:2'          *
*      15    REFERENCE FILE USED TO CREATE PRESENT '*FEB74:3'          *
*                                                                      *
* '*FEB74:1' "O,N2" RESULTS FROM 175 AND 584 A OBSERVATIONS            *
*        FOR "CHIREGION Z = 1", I.E. COS(SZA) > 0.1                    *
*                                                                      *
* '*FEB74:2' "O,N2" RESULTS FROM 175 AND 584 A OBSERVATIONS            *
*        FOR "CHIREGION Z = 3", I.E. SZA > 95 DEGREES                  *
*        (SUNRISE-SUNSET OBSERVATIONS, WITH ALL RESULTS                *
*         REFERRING TO POINT "Q" OF MINIMUM RAY HEIGHT)                *
*                                                                      *
* '*FEB74:3' "O2" RESULTS FROM 1609 A OBSERVATIONS                     *
*            (SUNRISE-SUNSET OBSERVATIONS ONLY)                        *
*                                                                      *
* '*FEB74:4' COPIES OF PROGRAMS USED IN TRANSITION FROM                *
*        MEASUREMENTS TO VARIOUS LEVELS OF STANDARDIZED                *
*        SCIENTIFIC RESULTS                                            *
*                                                                      *
************************************************************************
```

```
NAME=@FEB74:1

1'@FEB74:1' START OF FILE  ************************************************
 *
 *
 *
 *  RESULTS FROM 175 AND 584 A OBSERVATIONS FOR CHIREGION Z = 1
 *               ***********************************************
 *
 ******            I.E. COS(SZA) > 0.1
 ******                 GIVING TAU=TAU(OBS)*COS(SZA) WHICH IS VERY
 ******                 CLOSE TO THE OPTICAL DEPTH OF THE VERTICAL
 ******               COLUMN, WHEN SZA IS NOT TOO LARGE(E.G. < 75 DEG).
 *
 *
 ******  FOR INTRODUCTION AND MEANING OF DATA COLUMNS,
 ******  SEE
 ******      '@FEB74'
 ******       ******
 *
 ******  REMEMBER: "MASS DENSITIES" FROM 584 A MUST BE MULTIPLIED
 ******  *******   **************                BY
 ******                                    1.00E-26
 ******                                    ********  TO REFLECT
 ******  THE STANDARD UNITS OF KILOGRAMS PER CUBIC METER
 ******
 ******
 ******            NUMBER DENSITIES FROM 175 A ARE #/(CUBIC METER)
 ******            ***************************
 ******   BUT REFLECT THE ASSUMPTION THAT ALL PARTICLES HAVE THE
 ******   SAME CROSS SECTION OF 3.51 MEGABARN (BELIEVED TO APPLY TO
 ******   ATOMIC OXYGEN WITH AN ESTIMATED ACCURACY OF 30-50 PERCENT
 ******   PESSIMISTICALLY: ABOUT 10-15 PERCENT, IF ONE ADOPTS THE
 ******   THE VALUE OF 13.0 MEGABARN FOR O-ABSORPTION AT 584 A AND
 ******   CONSIDERS THE FACT THAT OUR VALUE FOR 175 A HAS RESULTED
 ******   FROM AN EVALUTION OF SIMULTANEOUS OBSERVATIONS OF 175 A
 ******   AND 584 A WITH ZENITH ANGLES GREATER THAN 95 DEGREES, I.E.
 ******   ALLOWING COMPARISONS FOR ALTITUDES HIGH ENOUGH TO ASSURE
 ******   THAT CORRECTIONS FOR N2-CONTRIBUTIONS WERE QUITE MINOR,
 ******   WITH REMAINING UNCERTAINTIES OF THAT PROCEDURE BEING NO
 ******   GREATER THAN 5 PERCENT).
 ******
 ******   SINCE THE N2 CROSS SECTION AT 175 A IS PROBABLY SOMEWHAT
 ******   DIFFERENT FROM THAT FOR O (NOT TOO WELL KNOWN), THE NUMBER
 ******   DENSITIES LISTED FOR THE 200-160 KM REGION HERE, I.E. FOR
 ******   "CHIREGION 1", ARE NOT NEARLY AS CLOSE TO EITHER O DENSITY
 ******   OR TOTAL PARTICLE NUMBER DENSITY AS COMPARED WITH THE
 ******   CORRESPONDING "CHIREGION 3" RESULTS FOR HIGHER ALTITUDES
 ******   ( SEE RESULTS IN FILE '@FEB74:2').
 *
 3
74033   672317   ORBIT:   525  ************************* EUVS.AC00511
MAT=1  LGROUP= 18  CHIREGION= 1  REFERENCE FILE 750924        0
TOW HQ: 156.76
TMC#  1   175 ANG   BKGR=    1.517  SO=   465.270  METHOD: CPT2  HQ=  344.42
 HQREF SCLHT  TAU  4O1N25 #/M3  QLAT  QLONG   QLOC      GMT     MLAT  SZA  MN% MX% AV%  ST. DEV  #PT     AO        A1
 ------ ----- ---- ---------- ----- ------ -------- -------- ---- ---- --- --- --- --------- --- --------- ---------
 200.00 35.04  .067  .54565E 16  51.7 -167.7 13:10:13  2076531  48.8  70.2  18  24  21  .556E-01   6  .301E 01 -.285E-01
 180.00 30.01  .121  .11487E 17  48.4 -164.2 13:24:54  2130741  46.2  67.9   8  24  16  .476E-01  11  .389E 01 -.333E-01
 170.00 26.49  .166  .17866E 17  46.1 -162.2 13:33:46  2167114  44.4  66.3   9  23  14  .302E-01   9  .462E 01 -.377E-01
 160.00 30.85  .239  .22058E 17  42.4 -159.3 13:46: 2  2222945  41.5  64.1   8  12  10  .187E-01   6  .375E 01 -.324E-01
TMC#  3   584 ANG   BKGR=     .464  SO=  1949.172  METHOD: CPT2  HQ=  449.8 1
 HQREF SCLHT  TAU  4MASS #/M3  QLAT  QLONG   QLOC      GMT     MLAT  SZA  MN% MX% AV%  ST. DEV  #PT     AO        A1
```

FILE 2

AE-E

EUV PRELIMENARY FLUX DATA

75-107A-06B

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY IT CONTAINED ONE 9-TRACK, 1600 BPI TAPE WRITTEN IN EBCDIC. THERE IS ONE RESTORED TAPE WRITTEN IN ASCII. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON A 930 COMPUTER AND WAS RESTORED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

| DR# | DS# | D# | FILES | TIME SPAN |
|---|---|---|---|---|
| DR003768 | DS003768 | D042353 | 1-5 | 12/27/76 - 12/30/79 |

| REQ. AGENT | RAND NO. | ACQ. AGENT |
|---|---|---|
| CMP | RC7836 | RNH |

AE-C, E

EUV ABSORPTION DATA

71-101A-06B

75-107A-06B

This data set consists of 2 tapes. They are 9-track, 1600 BPI, EBCDIC, and multi-filed. The tapes were created on the XDS 930 computer. This catalog also contains the dump sent us with descriptions from the experimenter.

The D and C numbers along with the time spans are as follows:

AE-C

| D# | C# | FILES | TIME SPAN |
|---|---|---|---|
| D-29636 | C-19247 | 8 | February 1974 |

AE-E

| D# | C# | FILES | TIME SPAN |
|---|---|---|---|
| D-42353 | C-21213 | 18 | 12/27/76 - 12/30/79 |

```
1**** (@EUVFLX.EUVS)          FILE ISSUED 5 FEB 1980
*
*      SUPERSEDES 'EUVFLUX' FILE ISSUED 19 SEP 79
*      ==========================================
*
*
*          PRELIMINARY FLUX DATA FOR 7 EUV LINES(OR LINE GROUPS)
*          =====================================================
*
*  FROM AE-E EUVS OBSERVATIONS FROM JUNE 1977 TO 30 DEC 1979
*                                ======================
*
*    THE 7 WAVELENGTHS COVERED IN THIS DATA SET ARE
*
*    1   H LYMAN ALPHA 1216 A
*    2             BETA 1026 A
*    3   HE I          584 A
*    4   HE II         304 A
*    5   O IV GROUP    554 A
*    6   FE X BLEND    175 A (NOM.)
*    7   MG X          609 A
*
*
*
*  IT MUST BE EMPHASIZED THAT  "ABSOLUTE" VALUES REFLECT ESTIMATES.
*                              ================================
*
*      THESE ESTIMATES ARE BASED ON THE FOLLOWING WORKING ASSUMPTIONS:
*      (A) ADOPTING AERONOMICAL REF. SPECTRUM (F74113)(HEROUX AND
*          HINTEREGGER, 1978) FOR ABSOLUTE VALUES ON 28 APRIL 1974.
*      (B) [illegible] EUVS OBSERVATIONS FROM 1974 THROUGH JULY
*          1976 TO ESTABLISH ESTIMATED REFERENCE FLUXES FOR JULY 1976
*          (F76REF) ADOPTED AS (CALIBRATION) OF THE AE-E INSTRUMENT. THE LATTER
*          APPEARS TO HAVE BECOME VERY STABLE BY THEN.  F76REF WAS THEN ATTACHED TO AUG
*          BASIC OBSERVATIONAL AE-E REFERENCE DATA SET FOR JULY 1976
*          ---------------------------------------------------------
*          WHICH REPRESENTS AVERAGES OF CAREFULLY SELECTED AE-E OBSERVATONS AT
*          ALL WAVELENGTHS (INCLUDING ALL GOOD OBSERVATIONS OF DATE RANGE
*          76190-76210 UNDER SOLAR CONDITIONS OF A SPOTLESS DISK, NO
*          VISIBLE ACTIVE REGIONS, AND NO SIGNIFICANT DAY-TO-DAY VARIATIONS).
*      (C) ASSUMING THAT THE AE-E INSTRUMENT SENSITIVITIES HAVE NOT
*          DEGRADED, I.E. REMAINED CONSTANT THROUGH 1977--1979.
*
*  THE PRESENT RESULTS ALSO INCLUDE 14 AUGUST,1979,I.E. THE DATE OF A
*  ROCKET EXPERIMENT MEASURING SOLAR EUV IN PARTS OF THE SPECTRUM; RESULTS
*  FROM THE LATTER WILL BE VERY DIFFICULT TO REDUCE TO (UNATTENUATED VALUES),
*  BECAUSE OF THE UNFORTUNATELY HIGH OPTICAL DEPTHS AT THE RATHER MODEST PEAK
*  ALTITUDE OF 175 KM REACHED BY THE ROCKET;  HENCE, A REASONABLY ACCURATE
*  UPRATING OF ABSOLUTE AE-E MONOCHROMATOR SENSITIVITIES WITH PROPERLY
*  CORRECTED RESULTS FROM THIS ROCKET EXPERIMENT WILL NOT BE COMPLETED FOR
*  SOME TIME.
*
*
*      THE (RELATIVE PRECISION)
*      ========================
*  RELATIVE COMPARISONS OF FLUXES FOR DIFFERENT DATES ARE ALREADY
*  [illegible] THROUGHOUT 1977 BECAUSE OF
*  PRACTICALLY INSIGNIFICANT RESIDUAL ATMOSPHERIC ABSORPTION ( ONLY
*  MEASUREMENTS MADE UNDER SUFFICIENTLY SMALL SOLAR ZENITH ANGLES ARE INCLUDED
*  IN THE PRESENT DATA SET).  THE PRESENT DATA SET DOES NOT YET INCLUDE
*  CORRECTIONS FOR ATMOSPHERIC ABSORPTION.  THESE WILL BE MORE OR LESS
*  SIGNIFICANT DEPENDING ON WAVELENGTHS AND ON THE SATELLITE ORBITS.
*  [illegible] THE DATA FROM 1979 AND MORE OF 1978 WILL BE EXPECTED
*  SINCE THE AE-E SATELLITE WAS ORBITING AT RELATIVELY LOW ALTITUDES.
```

RW 8826 A

FILE 5

AEE

DATA Files are 5, 8, 11, 14 + 17

D-42353
C-21213
12/20/76 - 12/30/79

```
*   HOWEVER, THE MAGNITUDE OF THESE FUTURE CORRECTIONS WILL BE
*   RELATIVELY MODEST FOR MOST WAVELENGTHS AND COMPLETELY NEGLIGIBLE
*   FOR WAVELENGTHS 1 AND 2. UPON COMPLETION OF THESE CORRECTIONS,
*   A REVISED DATA SET WILL BE RELEASED.
*
*   THE NUMERICAL VALUES OF ALL EUV FLUXES IN THE FOLLOWING LIST
*       ---------------
*   REFER TO FULL-DISK IRRADIANCE AT THE TOP OF THE EARTH'S ATMOSPHERE
*           ------------------------------------------------------
*   EXPRESSED IN THE SAME UNITS AS USED IN THE AERONOMICAL REFERENCE
*   SPECTRUM 'F74113' (23 APR 74) AND PRELIMINARY REFERENCE SPECTRUM
*   'P76REF' (JULY 1976 AVG. OF DAYS WITH R2=0 IN DATE RANGE 76198-76210),
*   I.E. IN
*           UNITS OF 1E 10 PHOTONS PER SECOND PER SQUARE METER
*                  ---------------------------------------
*
*
*****************************************************************************
1**** ELV FLUX DATA FOR SEVEN WAVELENGTHS IDENTIFIED ABOVE
                                        WLG 1  WLG 2  WLG 3  WLG 4  WLG 5  WLG6  WLG 7
 DATA TAKEN FROM  P76REF.EUVS          294925   4375   1588   8343    799    648    639
 ------------------------------
1
        START     STOP      ORBIT        WLG 1  WLG 2  WLG 3  WLG 4  WLG 5  WLG 6  WLG 7
 77154 54379111 54700111  8247        384092      0   2137      0   1024    844    987
 77154 54708111 55043111  8247             0      0   2196      0   1048    850   1008
 77155 22411000 23010000  8268        387024   6320   2205   8478   1042    838    998
 77156 22115000 22915000  8274        381160   6291      0   8788      0      0      0
 77157 32627000 33401000  8292        387024   6352   2214   9234   1024    837    990
 77158 21475000 22050000  8306        384092   6355   2206   9034   1034    830   1009
 77159 31167000 31770000  8321        381160   6373      0   9107      0      0      0
 77161 20426000 21334000  8354        378228   6385   2184   9048   1013    819    954
 77162 14290000 14850000  8365             0   6087      0   8702      0      0      0
 77163 14691000 15073000  8385        369432   6061      0   8723      0      0      0
 77164 24650000 25035000  8403        369432   6070      0   8759      0    475      0
 77165 25042000 25605000  8409             0      0   2108      0    994    468    878
 77165 13498000 13890000  8417             0      0   2083      0    991    477    885
 77165 13906000 14274000  8417        363568   5906      0   8591      0      0      0
 77166 50490000 51074000  8440             0   5903      0   8661      0      0      0
 77166 51098000 51458000  8440        357704   5808      0   8527      0      0      0
 77168  1378000  1770000  8463        357704   5786      0   8349      0    808      0
 77168  1794000  2154000  8468             0      0   2051      0   1012    809    931
 77168 76146000 76531000  8493             0      0   2054      0   1005    841    962
 77169 76562000 76915000  8493        354772   5687      0   7996      0      0      0
 77169 70022000 70474000  8508             0   5682      0   8078      0      0      0
 77170 70794000 71057000  8508        354772   5876      0   8073      0      0      0
 77171 64426000 65210000  8523        360636   5796   2162   8246   1013    847    988
 77172 58545000 59320000  8538        364000   6080   2209   8260   1024    836    989
 77174 47666111 48434111  8568        378228   6258   2345   8808   1065    856   1061
 77174 53250111 54020111  8601        398752   6853   2537   9198   1115    885   1128
 77179 31625111 31970111  8619        398752   6975      0   9281      0      0      0
 77181 10673111 11449111  8673        416344   6902   2363   8966   1070    880   1095
 77182 10801111 11578111  8689        407548   6761      0   8964      0      0      0
 77183 32498111 33081111  8709        398752   6818   2240   8632   1058    867   1038
 77184 32585111 33614111  8725        404616   6418   2255   8529   1071    863   1058
 77185 65065111 65841111  8747        407548   6382      0   8554      0      0      0
 77186 32687111 33471111  8767        407548   6381   2210   8320   1080    838   1008
 77187 22225111 22482111  8771             0      0   2198      0   1058    830    991
 77188 11386000 11721111  8785             0   6108      0   8273      0      0      0
 77190 21625000 22008000  8820        401684   5992      0   8400      0      0      0
 77191 59944000 60344000  8842             0      0   2162      0   1045    489    901
 77192 38200000 38873000  8854        395820   6064      0   8379      0      0      0
 77193 16004111 16441111  8880        392888   6000      0   8318      0      0      0
 77194 16442000 17121000  8883        392888   5999   2168   8509   1056    875    885
```

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