[redacted]

AEROS 1 and 2

EUV SPECTRA DATA

72-100A-04A

74-055A-04A

AEROS 1 & 2

EUV SPECTRA DATA, TAPE

72-100A-04A

74-055A-03A

This data set has been restored. There was originally 1 9-track, 1600 BPI tape written in BIN. There is 1 restored tape. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The tape was created on an UNIVAC 1100 computer. The DR and DS numbers along with the corresponding D numbers and the time spans are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR03647	DS03647	D47969	1	12/23/72 - 08/05/73 (AEROS 1) 07/21/74 - 07/03/75 (AEROS 2)

REQ. AGENT	RAND NO.	ACQ. AGENT
DEW	V0146	RNH

AEROS A AND B
EUV/SPECTRA DATA
72-100A-04A
74-055A-04A

This data set catalog consists of 1 tape. The tape was created on a UNIVAC 1100 computer. The tapes are 1600 BPI, binary, 9 track, with one file of data. The D and C numbers are as follows:

D#	C#	TIME SPAN	
D-47969	C-22438	12/23/72 - 08/05/73	(AEROS A)
		07/21/74 - 07/03/75	(AEROS B)

* AEROS B data starts at record 23.

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Description of magnetic tape "AEROS-EUV"

This tape summarizes the observations of the EUV-spectrometer flown in 1972 ... 75 on satellites AEROS-A and -B. These were the first instruments of this kind which had an on-board calibration device. A description of the instrument was given by the experimenter G. SCHMIDTKE et al. in J. Geophys. 4o (1974), 577 (see also the report of the AEROS-team: Ergebnisse des AEROS-Satellitenprogramms, Heidelberg 1980, which can be found at WDC).

Using the calibrations the recorded spectra were quantitatively evaluated in 42 spectral ranges (see annexed example table for 19. Jan. 1973). These had been chosen by G. SCHMIDTKE (in agreement with H. WINTERBERGER) so as to be adapted to the needs of aeronomy. Note that for ranges marked 'unaufgelöst' not the total energy flux in that specific range is given but only that obtained after subtraction of the individually marked emission lines in the same range. (E.g. for range 8o.o - 63.o the three emissions marked before, i.e. OV, [illegible] cont., O III, must be added in order to get the total emission in that range while for 46.o - 37.o no specific emission is marked such that the indication gives directly the total emission.)

Since for some applications, in particular indicing (see SCHMIDTKE Geophys. Res. Lett. 3, (1976), 573) intensities in broader spectral ranges are of some interest, after the 42 indications we give yet the total intensity in 8 subranges, then in 2 and finally in the whole range of the instrument from 1o3 to 16 nm. Thus the total number of wavelength ranges noted per observation is 42 + 8 + 2 + 1 = 53; for each of these we give the energy flux from the full disk in $\mu W m^{-2}$ and also the photon flux in $m^{-2} s^{-1}$. So we have a total of 1o6 measured values per observation (of which, of cause, all but 42 are redundant). Note that lack of suitable observation is either marked by a negative integer or (most often) by zero intensity. (Correctly measured intensities must always be greater than zero.)

The number of spectra per day was variable between one and twelve according to the conditions of the satellite. One important difference between the two AEROS missions should be held in mind: while data from 1974 and 75 can all be considered as being uninfluenced by absorption in the terrestrial atmosphere (because they were corrected, where needed) this is not so for the 1973 data for which the effectively measured intensities (i.e. including loss by absorption) are given. The solar zenith angle at the satellite and the altitude of this latter are, however, given and corrections are left for the user to make. Anyway, only a small part of the data (where the height was less than 25o km) might be influenced by absorption.

Daily average spectra have been published as reports of the former 'Fraunhofer-Institut für physikalische Weltraumforschung' at Freiburg (F.R.G.):
for AEROS-A (Dec. 1972 - Aug. 1973): IPW-WB3 (1978)
for AEROS-B (July 1974 - Sept. 1975): IPW-WB11 (198o).
Copies of these exist at the WDC's.
Different from these daily average data all usable individual measurements of full spectra are given on the tape. (Only during the last months of the second mission one channel of the instrument had failed so that all spectra cover only half of the total range).

The tape has the following format:

1/2 inch, 9 tracks (so that per character these are 8 valid bits plus one for (odd) parity);

16oo B.p.i. ;
double words of 9 Bytes each (i.e. 4 and half Bytes (36 bits) for one word).

A block length of 232o words is used throughout; all blocks have identic structure (see 'coding' below). The whole data set is given in chronological order (both missions) in one file ended with two EOF marks at the very end.

Each block has 2o 'lines' of equal structure, each of which contains 116 words with 36 valid bits each. Each line gives one individual spectrum.

Coding (in lines of 116 words each) is as follows:

Word no.	dec.digit	contents	dec.digit
1	7..3	11111 for mission A 22220 for mission B	2..o measurement no 3..o
2	4..o	1co x solar zenith angle χ / ^{o}	
3	1..o	1c x kp (magn. activity)	
4	2..o	Zürich sunspot number	
5	2..o	COVINGTON's solar (1c.7 cm) noise index	
6	5..o	date (5,4 day; 3.2 month; 1,o year)	
7	5..o	Univ. time (5,4 hour; 3,2 min; 1,o s)	
8	4..o	modif. Julian date (MJD1, unit d)	
9	5..o	Julian microday (MJL2, unit $1c^{-6}$ d)	
1o..51		energy flux / μWm^{-2}	in 42 wavelength ranges
52..59		" "	in 8 subranges
6o,61		" "	in 2 subranges
62		" "	total
63..1o4		photon flux / $1c^{1o}$ $m^{-2}s^{-1}$	in 42 wavelength rang
1o5..112		" "	in 8 subranges
113...114		" "	in 2 subranges
115		" "	total
116	5..o	av. height of satellite / m	

Missing values: negative number (for words 1...9 and 116)
zero (for intensity values: 1o...115)

[illegible] Z. Covington-Index $F_{10.7} = 95$.

4

Wellenlänge bzw. Bereich	Identifikation	Energie-fluß $\mu W\ m^{-2}$	Photonen-fluß $10^{12} m^{-2} s^{-1}$
103.8+103.2	O VI	86	45
102.57	H Ly-2	77	40
99.10	N III	14	7
97.70	C III	106	52
97.25	H Ly-3	16	8
94.97	H Ly-4	9	4
94.45	S VI	3	1
102.7-91.1	unaufgelöst	45	22
91.1-89.0	H cont	92	42
89.0-86.0	H cont	81	36
83.42	O II,III	14	6
86.0-83.0	H cont	45	19
83.0-80.0	H cont	23	10
91.1-80.0	unaufgelöst	10	4
79.02+78.77	O IV	14	5
77.04	Ne VIII	7	3
80.0-77.0	H cont	16	6
76.04	O V	6	2
77.0-74.0	H cont	10	4
70.34	O III	8	3
80.0-63.0	unaufgelöst	25	9
62.97	O V	60	19
62.53	Mg X	15	5
60.98	Mg X	31	9
58.43	He I	55	16
55.44	O IV	26	7
52.11	Si XII	12	3
50.4-47.0	HeI cont	47	12
49.93	Si XII	15	4
46.52	Ne VII	10	2
63.0-46.0	unaufgelöst	37	10
46.0-37.0	unaufgelöst	33	7
36.81	Mg IX	44	8
36.07	Fe XVI	18	3
33.54	Fe XVI	40	7
30.38	He II	572	87
28.41	Fe XV	63	9
37.0-28.0	unaufgelöst	221	36
28.0-23.1	unaufgelöst	359	46
23.1-20.5	unaufgelöst	190	21
20.5-17.6	unaufgelöst	761	73
17.6-15.5	unaufgelöst	142	12
102.7-91.1	integral	270	134
91.1-80.0	integral	265	117
80.0-63.0	integral	86	32
63.0-46.0	integral	308	87
46.0-37.0	integral	33	7
37.0-28.0	integral	958	150
28.0-20.5	integral	549	67
20.5-15.5	integral	903	85
103 - 46	integral	929	370
46 - 16	integral	2443	309
103-16	integral	3372	679

DS03647

12/23/72 - 7/3/75

EXE TPDUMP ES

DUMP OF TAPE CN1114

NPUT TAPE CN1114 CN FT
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(96)	1 2145	214254	157373	4661	1 414	42112	16627	023771
(144)	12075	27561	1.312	1018442	13201	04661	135676	026705
(192)	6547	1144144	4447	126572	126 72	33542	021255	103311
(240)	74514	1 7352	41446	1 3	2 117	2111	16176	1333342
(288)	564322	2745044	00424554	6 21	622121	176634	1234.1	074514
(336)	3233415	1167664	33371620	1432331	012264 62	13716413	006101	005777
(384)	1161	7556	1 7	146	1.47	03167	006274	005211
(432)	37 1	2876	1316	5 6	627	00313	743	000245
(480)	0434	0314	01313	2765	0561	001376	002746	001175
(528)	0462	2272	1545	0323	1663	01211	001246	000476
(576)	11 4	17531	1662	6 6	11 66	0 4 56	16367	002235
(624)	023744	2123	463	17 73	1011	3276	15144	020624
(672)	5174	11547	0163243	2627 76	0523 5132	013667	000033	000000060
(720)	145	72717	316432	1 1313	1655 46	2035	177113	030343
(768)	254531	3 773	13615	4801	111716	1230657	2 5233	027327
(816)	0110071	045656	0002 332	0026124	013157	32167	11253	020252
(864)	2 1447	052651	147234	41413	065761	152626	061176	026572
(912)	116 72	33542	31255	1 3311	74 14	1173	41726	111050
(960)	2 12642	165266	673065	12135 7	582254	2546347	4 4564	671116
(1008)	0663742	214377	1 57270	0874514	0043275660	3174576	3145133	1555060
(1056)	12 13 1	1556361	16671	6444	1161	10377	11163	006521
(1104)	6163	3483	8736	57 1	77	3744	1433	000552
(1152)	0700	003337	1021	767	76	0349	1426	003216
(1200)	641	1001521	3111	1262	0462	0207	545	0320
(1248)	1663	1211	1246	1474	1275	17655	1534	006360
(1296)	1 3 6	3633	20153	2131	25766	2318	5243	017716
(1344)	1211	033123	14141	1773 4	051 66	115157	166245	2663252
(1392)	523 5133	13663	015	1166	0145	72717	4227 2	121313
(1440)	22-311	22 735	2777 4	3642	275456	032553	17113	005033
(1488)	115770	237 25	021421	565	114621	4776	2 721	027615
(1536)	13743	035 54	12027	0 2566	015154	0054152	147714	031613
(1584)	6 73	152426	6 3 2	2 725	132322	35	22303	107065
(1632)	7523	11327	41726	131 5	2 4374	165267	624 50	1213507
(1680)	5 2254	0254 347	4 4564	724137	7 6755	222771	1 73136	075230
(1728)	33-4221	1745763	3145133	1643114	0012112715	13756031	7434	007013
(1776)	1224	11282	1236	863	6173	3655	7156	006040
(1824)	1024	2312	1510	565	744	355	1144	000305
(1872)	0506	36	1457	323	6640	1523	3111	000001264
(1920)	472	092161	1566	1335	1753	1221	1314	000000474
(1968)	117	2 363	1534	6473	1516	3657	15153	002131
(2016)	27562	023751	5437	155	1 2	34 1	14141	017364
(2064)	3533	115513	172246	2675446	0523 5134	1402	24	000000045
(2112)	136	13776	67	1 1372	1756	22221	2 7734	031642
(2160)	275456	3 651	17155	5 42	116 16	237 2	211421	3655
(2208)	115161	85 54	2721	2766	13743	033054	30312 46	020560
(2256)	152 1	54162	147714	3135	65 65	15174	06134	027250
(2304)	132322	35 2	32313	1 7 65	17533	11327	35765	107124
(2352)	017 7671	14 6 1	5 47	1 3344	434 12	2161463	322656	734432

(2400)	7 7421	223 77	1371131	7523	3116563	1470056	2504341	1644053
(2448)	1 724662	257 735	7477	7113	1324	11252	1241	000000000565
(2496)	173	3641	7156	6 4	1 26	3221	1513	000000000565
(2544)	0745	355	1 44	2316	2506	36	1457	000000003230
(2592)	3633	1511	3175	1261	1472	216	0000000 6566	000000000335
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(2688)	6743	31 1	10726	1594	27573	2376	5441	000000020117
(2736)	1220	31384	12644	14532	153561	107152	000000162732	000002616017
(2784)	523 5135	14 13	145	145	136	113775	000000632506	000000121322
(2832)	33 3563	2222	211344	7 124	1275456	133113	000000017155	000000005163
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(2928)	14111	033647	0 12134	021231	15436	055366	00000152522	000000031655
(2976)	66113	35374	6 633	6462	121355	235002	000000022343	000000106567
(3024)	7523	113561	362	1 7124	17 7671	140601	000000566757	000001033344
(3072)	00434512	2161463	0322656	74012	722430	226377	000001073440	000000075238
(3120)	3128556	147 56	2514341	1662550	1724464	12617234	000000007477	000000007064
(3168)	124	11252	3251	565	0175	3677	000000173 4	000000106202
(3216)	1041	3254	1532	6 1	751	160361	000000001 63	000000000310
(3264)	0521	366	1507	3304	0641	1524	000000003175	000000001272
(3312)	46	2144	566	0335	1742	122	000000001317	000000000431
(3360)	115	1664	1375	61 7	6743	1 1	000000012726	000000001604
(3408)	00027730	024356	00005543	20171	01220	31374	000000012844	000000014532
(3456)	54306	107346	0163654	2623132	5235136	1456	000000000027	000000000055
(3504)	136	23675	174 15	121723	174317	232265	000000216460	000000033101
(3552)	3 3351	34374	17671	15252	122433	251701	000000223205	000000032326
(3600)	00121777	52537	00022060	031 42	014427	034756	000000012462	000000021721
(3648)	16077	57221	0155374	032563	0070016	155334	000000022254	000000026462
(3696)	131355	353 5	22645	1 746	77245	117537	000000036617	000001107604
(3744)	01716666	134 02	0573575	0767727	41 377	272472	000000132444	000000761324
(3792)	746252	234372	111 7626	077240	3134637	1400227	000002332136	000001727576
(3840)	1 5327 4	124625 2	1 30	7275	1265	11476	000000001313	000000000615
(3888)	2 2	4 17	7552	6774	1 7	3373	000000001661	000000000617
(3936)	3776	371	1112	0320	0535	0004	000000001550	000000003362
(3984)	3657	21361	3161	1317	0 2466	02144	000000001572	000000000342
(4032)	1756	1246	1365	436	1155	16727	000000001242	000000006157
(4080)	6371	2717	12134	1477	31621	25251	000000005726	000000020471
(4128)	1246	03155	011310	013533	056172	106467	000000164561	000002616373
(4176)	523 5137	14527	24	1055	0 136	023675	000000365274	000000121323
(4224)	2 73424	232265	216460	331 1	3 3351	134374	000000017671	000000005252
(4272)	00122433	0251701	0223205	032326	000000121777	52537	000000022060	000000031042
(4320)	14427	034756	012462	021721	0016077	57221	000000155374	000000032652
(4368)	7 616	1561 4	62330	26462	131355	0353 5	000000022645	000000107460
(4416)	7724	117537	36625	1 7614	1716666	134 02	000000573663	000000767727
(4464)	0413300	0000262 7472	0392444	0000001761324	0000000746252	0000000234372	000000111 611	000000007724
(4512)	3134743	1400227	2332136	0000001727576	000001533773	000012463571	000000010030	000000007275
(4560)	1265	011476	1313	16 5	1 0242	1 4217	000000007552	000000006374
(4608)	1070	0000003373	1601	617	776	5 0371	000000001112	000000000320
(4656)	0535	0000000 460	0201550	0000000 03362	000000001661	000000001561	000000003174	000000001321
(4704)	46	12144	572	1342	3756	01246	000000001365	000000000436
(4752)	1155	16727	1242	616	6371	2717	000000012134	000000001477
(4800)	00033621	00000025251	0000005726	0000000020477	0000000001246	031551	000000011310	000000013533
(4848)	056072	000000156527	0164601	0000002725240	0000523 5140	014074	000000046027	000000000055
(4896)	136	23675	663170	121723	3511375	232265	000000216460	000000033101
(4944)	003 3351	34374	17671	15252	122433	251701	000000223205	000000032326
(4992)	00121777	52537	00022060	031 42	014427	034756	000000012462	000000021721
(5040)	16077	57221	155374	032652	0070016	156174	000000096330	000000026462
(5088)	131355	353 5	22522	1 7216	7724	117537	000000036653	000000111212
(5136)	01717744	000000134541	0575576	0000077561	0000000414463	0000002051744	000000134656	000000761324
(5184)	00746252	000000234372	0111224	000000077240	000003142127	000001412273	000000356622	000001727576
(5232)	1 577322	1252712	1 30	7275	1265	011476	000000001313	000000000615
(5280)	2 2	4 17	7552	6774	1 7	3373	000000001661	000000000617
(5328)	3776	371	1112	0320	0535	0004	000000001550	000000003362
(5376)	661	1561	003174	001321	0 1466	02144	000000001572	000000000340
(5424)	1752	1246	1365	1477	1372	11674	000000001247	000000006200
(5472)	6437	02746	12166	0000001151	2621	25251	000000005726	000000020471
(5520)	1246	031625	011435	013676	056172	107015	000000165107	000002663231

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( 13728)        554        1371        3354        1534        466        1601        532   000000000421
( 13776)        21 4        1443        1536        511        764        21441        000000007921
( 13824)        0000        0000        0009        0000        0000        0000        000000021744
( 13872)        1443        0000        0000        0000        0000        0000        777777777604

        FILE    INPUT    DATA RECORDS    M.A.          READ ERROR SUMMARY          INPUT RETRIES
                RECS.       INPUT        SIZE      PERM  ZERO R   SHORT  UNDEF.  #RECS.  TOTAL#
          1       53         53          1 44

IOC        DUMP STOPPED AFTER FILE   1          # OF PERMANENT READ ERRORS

START TIME 1 / 1/92  10: 2:48        STOP TIME 1 /01/92  1 :3: 5
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