BUV DARK CURRENT STUDY 1978-79
E. G. Stassinopoulos

DISTRIBUTION PACKAGE

1. List of Distribution Materials
2. Copies of Master and Working Tapes (#1-3 each type) (6 tapes)
3. Tape Information Sheet (1 page)
4. Description of Master Tape Format (7 pages)
5. Sample Listings of Tape Contents: Output Types A and B (2 pages)
6. Document: "NIMBUS-4 BUV Dark Current Study: Data Filtering", NASA X-601-78-21, Stassinopoulos et al., June 1978.

70-025A-05H&052

BUV DARK CURRENT STUDY 1978-79
E. G. Stassinopoulos

DATA TAPES: MASTER and WORKING*

Tape Number	# of Files	Time Span	Data Gaps
1	222	Days 100 - 322, 1970	Day 294, 1970
2	236	Days 323 - 365, 1970 Days 1 - 206, 1971	Days 101-112, 148, 207-210, 1971
3	132	Days 211 - 350, 1971	Days 257, 260-266, 351-365, 1971

Tape Information

9 TRACK
LABEL = NL
RECFM = FB
LRECL = 560
BLKSIZE = 14000
DEN = 4 (6250 BPI)
~~EBCDIC~~ BINARY

Notes:

1. One FILE contains the data for one DAY. One RECORD contains the data for one SCAN, plus associated positional information, indices, etc. (see "Master Tape Format"). For example, File #1 on Master Tape #1 (and hence on Working Tape #1) contains all the records pertaining to Day 100, 1970.

2. Flux Data - the following models were used to obtain flux data for the tapes:

PROTONS	ELECTRONS
AP8-MAX	Inner Zone - AE6-MAX Outer Zone - AEI7-LO

3. Field Model - the IGRF 1975 model was used with epoch = 1971.0.

*There is a one-to-one correspondence between the files on the Master tapes and the files on the Working tapes. The only difference between the two types is that the Working tapes contain data from the Master tapes that has been subjected to filtering (see "Data Filtering" document: NASA X-601-78-21).

DESCRIPTION OF MASTER-TAPE FORMAT

	WORD NO.	WORD TYPE	VARIABLE NAME	EXPLANATIONS/COMMENTS	SOURCE/LOCATION
GROUP 1: SELECTION PARAMETERS	1	I*4	MODE	MODE = 0 – DATA (ACQUISITION) 1 – MCSA (CALIBRATION)	U–TAPE
	2	I*4	INOUT	INOUT = 1 – INSIDE ENERGETIC PROTON AND ELECTRON TRAPPING REGION ($1 < L < 4$) 2 – INSIDE ELECTRON TRAPPING REGION ONLY ($4 \leq L < 12$) 3 – EXTERNAL ($L \geq 12$)	TRAP
	3	I*4	NTD	NTD = 1 – NIGHT 2 – TWILIGHT 3 – DAY	INDEX
	4	I*4	ID	SINGLE INDEX FOR (INOUT, NTD): ID = 1 – (1,1) 4 – (2,1) 7 – (3,1) 2 – (1,2) 5 – (2,2) 8 – (3,2) 3 – (1,3) 6 – (2,3) 9 – (3,3)	INDEX
	5–28	24(I*4)	NG(I,J)	NG(I,J) = 0 – LOW GAIN I = 1 – 12 CHANNELS 1 – HIGH GAIN J = 1 – MONOCHROMATOR 2 – PHOTOMETER	MAIN
GROUP 2: MAPPING & ORDERING INDICES	29	I*4	MEGC	MATRIX ELEMENT, GEOCENTRIC COORDINATES	ELEMNT
	30	I*4	MEBL	MATRIX ELEMENT, BL SPACE	ELEMNT
	31	I*4	LTVE	LOCAL TIME VECTOR ELEMENT	ELEMNT
	32	I*4	MLTVE	MAGNETIC LOCAL TIME VECTOR ELEMENT	ELEMNT

DESCRIPTION OF MASTER-TAPE FORMAT

	WORD NO.	WORD TYPE	VARIABLE NAME	EXPLANATIONS/COMMENTS	SOURCE/LOCATION
GROUP 3: GEOPHYSICAL INDICES AND CLASSIFICATION	33	I*4	NDST	D_{st} MAGNETIC ACTIVITY INDEX, HOURLY	LOADMG,FMAG
	34	I*4	NAE	AE AURORAL ELECTROJET, HOURLY	LOADMG,FMAG
	35	I*4	NAP	DAILY A_p INDEX	LOADMG,FMAG
	36	R*4	TEN7	DAILY OTTAWA 2800 MHz (10.7 cm) SOLAR FLUX INDEX	LOADMG,FMAG
	37	I*4	KDST	RANGE INDEX FOR D_{st}^1; KDST = 1 – MAXIMUM 2 – MINIMUM 3 – INTERMEDIATE	INDEX
	38	I*4	KAE	RANGE INDEX FOR AE^1; KAE = 1 – MAXIMUM 2 – MINIMUM 3 – INTERMEDIATE	INDEX
	39	I*4	KAP	RANGE INDEX FOR A_p^1; KAP = 1 – MAXIMUM 2 – MINIMUM 3 – INTERMEDIATE	INDEX
	40	I*4	KTEN7	RANGE INDEX FOR 10.7 CM SOLAR FLUX[4]; KTEN7 = 1 – MAXIMUM 2 – MINIMUM 3 – INTERMEDIATE	INDEX

DESCRIPTION OF MASTER-TAPE FORMAT

	WORD NO.	WORD TYPE	VARIABLE NAME	EXPLANATIONS/COMMENTS	SOURCE/LOCATION
GROUP 4: DATES AND TIMES OF MEASUREMENTS	41	I*4	JYR	CALENDAR YEAR DATA WERE GATHERED	U–TAPE; WORD 15, HEADR1
	42	I*4	JDAYS	JULIAN DAY AT START OF SCAN	U–TAPE
	43	R*4	HRS	UNIVERSAL TIME AT START OF SCAN IN HOURS	MAIN
	44	R*4	SECS	UNIVERSAL TIME AT START OF SCAN IN SECONDS	U–TAPE
	45	I*4	JDAYE	SAME AS WORD 42, BUT AT END OF SCAN	MAIN
	46	R*4	HRE	SAME AS WORD 43, BUT AT END OF SCAN	MAIN
	47	R*4	SECE	SAME AS WORD 44, BUT AT END OF SCAN	MAIN
	48	R*4	XLTS	LOCAL TIME AT START OF SCAN	MAIN
	49	R*4	GMLTS	GEOMAGNETIC LOCAL TIME AT START OF SCAN	SMPARM

	WORD NO.	WORD TYPE	VARIABLE NAME	EXPLANATIONS/COMMENTS	SOURCE/LOCATION
GROUP 5: POSITIONAL COORDINATES IN GEOGRAPHIC AND MAGNETIC SPACE	50	R*4	GDLATS	GEODETIC LATITUDE AT START OF SCAN IN DEGREES ($+90^{o} \leqslant GDLATS \leqslant -90^{o}$)	UTAPE
	51	R*4	GDLONS	LONGITUDE AT START OF SCAN IN DEGREES ($+180^{o} \leqslant GDLONS \leqslant -180^{o}$)	UTAPE
	52	R*4	ALTS	ALTITUDE AT START OF SCAN IN KILOMETERS	UTAPE
	53	R*4	GCLATS	GEOCENTRIC LATITUDE AT START OF SCAN IN DEGREES ($+90^{o} \leqslant GCLATS \leqslant -90^{o}$)	CONVRT
	54	R*4	RKMS	RADIAL DISTANCE TO SATELLITE POSITION AT START OF SCAN IN KILOMETERS	CONVRT
	55	R*4	GMLATS	GEOMAGNETIC LATITUDE AT START OF SCAN IN DEGREES	SMPARM
	56	R*4	GMLONS	GEOMAGNETIC LONGITUDE AT START OF SCAN IN DEGREES	SMPARM
	57	R*4	B	MAGNETIC FIELD INTENSITY AT START OF SCAN IN GAUSS	INVARA
	58	R*4	XL	MAGNETIC SHELL PARAMETER AT START OF SCAN IN EARTH RADII	INVARA

DESCRIPTION OF MASTER-TAPE FORMAT

	WORD NO.	WORD TYPE	VARIABLE NAME	EXPLANATIONS/COMMENTS	SOURCE/LOCATION
GROUP 6: SOLAR MAGNETIC PARAMETERS AND ANGLES	59	R*4	SDEC	SUN DECLINATION IN DEGREES	SMPARM
	60	R*4	GSHA	GREENWICH SOLAR HOUR ANGLE IN HOURS	SMPARM
	61	R*4	TILT	TILT OF DIPOLE AXIS IN DEGREES	SMPARM
	62	R*4	SMHA	SOLAR MAGNETIC HOUR ANGLE IN HOURS	SMPARM
	63	R*4	SMLON	SOLAR MAGNETIC LONGITUDE IN DEGREES	SMPARM
	64	R*4	SOLSEC	SOLAR SECTOR	SMPARM
	65	R*4	SZEN	SOLAR ZENITH ANGLE AT START OF SCAN IN DEGREES	U-TAPE
	66	R*4	SAZ	SOLAR AZIMUTH ANGLE AT START OF SCAN IN DEGREES	U-TAPE
	67	R*4	VASP	SPARE FOR FUTURE USE, SET TO 0.0	~~U-TAPE~~

DESCRIPTION OF MASTER-TAPE FORMAT

	WORD NO.	WORD TYPE	VARIABLE NAME	EXPLANATIONS/COMMENTS	SOURCE/LOCATION
GROUP 7: PULSE COUNT DATA	68–79	12(R*4)	DATA(I,1)	MONOCHROMATOR PULSE COUNTS; I = 1–12 CHANNELS[2]	MAIN
	80–91	12(R*4)	DATA(I,2)	PHOTOMETER PULSE COUNTS; I = 1–12 CHANNELS[2]	MAIN
GROUP 8: ANALOG DATA	92–103	12(R*4)	U(I,1)	MONOCHROMATOR ANALOG DATA[3]; I = 1–12 CHANNELS[2]	MAIN
	104–115	12(R*4)	U(I,2)	PHOTOMETER ANALOG DATA[3]; I = 1–12 CHANNELS[2]	MAIN
GROUP 9: ENERGETIC TRAPPED PARTICLES	116–121	6(R*4)	ENR(I)	I = 1–6 ENERGETIC PARTICLE COUNTS	U–TAPE
	122–126	5(R*4)	ETN(I)	I = 1–5 INTEGRAL ELECTRON FLUXES[4] FOR FOLLOWING ENERGIES: E > 1, 2, 3, 4, 5 MeV	TRAP
	127–131	5(R*4)	PTN(I)	I = 1–5 INTEGRAL PROTON FLUXES[4] FOR FOLLOWING ENERGIES: E > 10, 20, 30, 50, 100 MeV	TRAP
GROUP 10: U–TAPE FILES & RECORDS SPARES	132–138	7(R*4)	SPARE(I)	SEVEN SPARE WORDS, SET TO 0.0	
	139	I*4	NFOLD	FILE NUMBER FROM U–TAPE	U–TAPE
	140	I*4	NROLD	RECORD NUMBER FROM U–TAPE	U–TAPE

MAP OF MASTER TAPE

FOOTNOTES

1 MAGNETIC INDEX RANGES

INDEX	MAX	MIN
D_{ST}	> 25	< –200
A_E	> 800	< 50
A_p	> 35	< 7
10.7	> 150	< 20

2 NOMINAL WAVELENGTHS

CHANNEL	WAVELENGTH (Å)
1	2555
2	2735
3	2830
4	2876
5	2922
6	2975
7	3019
8	3058
9	3125
10	3175
11	3312
12	3398

3 CONVERSION ALGORITHM

(Analog Values "U" to Particle Counts "PC")

$$PC = 10^{U/100}$$

4 INSTANTANEOUS, INTEGRAL, OMNIDIRECTIONAL, CHARGED PARTICLE FLUXES IN UNITS OF:

$$\# / cm^2 \text{ sec}$$

Sample Listing of Tapes - Type A

NF JDAY	NR SECS	UF	UR	M	MONO PULSE COUNTS / PHOTO PULSE COUNTS / MONO ANALOG DATA / PHOTO ANALOG DATA (GAIN PRECEDES PULSE COUNT) ----1--- ----2--- ----3--- ----4--- ----5--- ----6--- ----7--- ----8--- ----9--- ---10--- ---11--- ---12---
213	35	216	96	0	1 63686 1 46869 1 47504 1 46869 1 50693 1 53906 1 53261 1 39318 1 41193 1 44337 1 31569 1 37450
313	3683				1 46433 1 39011 1 40241 1 36560 1 38397 1 38397 1 31693 1 22987 1 28674 1 26272 1 25075 1 23881
					-99 463 473 -99 473 502 -99 510 -99 -99 -77 514
					-77 482 501 492 -99 502 -77 501 -77 -77 -77 -77
213	36	216	97	0	1 109408 1 125702 1 95068 1 96482 1 105060 1 89453 1 83906 1 81158 1 73683 1 79107 1 76367 1 80693
313	3715				1 90581 1 77875 1 73268 1 79861 1 66108 1 61601 1 60320 1 70001 1 60960 1 55862 1 43947 1 48931
					513 501 -99 506 -99 506 -99 533 476 499 470 467
					495 -99 -77 -99 -99 504 490 483 510 -99 -99 513
213	37	216	98	0	0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 1 152023 1 152023 1 148852 1 150435 1 139499 1 131768
313	3747				0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 1 109861 1 111264 1 102897 1 97389 1 101515 1 93294
					-77 -77 -77 -77 -77 -77 519 -99 529 531 488 -99
					-77 -77 -77 -77 -77 -77 508 482 530 -99 502 -99
213	38	216	99	0	0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 1 503920 1 480884 1 458629 1 437115 1 411210 1 381485
313	3811				0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 1 333886 1 317885 1 321849 1 294591 1 264703 1 243313
					-77 -77 -77 -77 -77 -77 580 571 577 573 502 559
					-77 -77 -77 -77 -77 -77 567 558 559 549 505 557
213	39	216	100	0	0 55 0 7 0 4432 01120281 01048018 0 841516 1 503920 1 480884 1 458629 1 437115 1 411210 1 381485
313	3843				0 572547 0 693 0 390 0 693767 0 668051 0 507800 1 333886 1 317885 1 321849 1 294591 1 264703 1 243313
					-77 -77 -77 -77 -77 -77 580 571 577 573 502 559
					-77 -77 -77 -77 -77 -77 567 558 559 549 505 557
213	40	216	101	0	11374711 11343215 11253897 11343215 11312605 11225731 11198315 11145617 11171620 11071504 11002702 1 980912
313	3875				1 850695 1 790375 1 775905 1 805083 1 761666 1 693767 1 706925 1 680810 1 680810 1 643103 1 630508 1 583882
					607 617 620 624 605 609 617 615 609 600 606 599
					598 606 607 588 596 589 592 578 592 586 505 574
213	41	216	102	0	1 -1 11838704 11886329 11792718 11838704 11792718 11705337 11623583 11623583 11546931 11474917 11510371
313	3907				11078254 11002493 11002493 11002493 1 984407 1 949200 1 984407 1 932061 1 915220 1 898670 1 898000 1 835237
					629 628 629 628 631 627 620 617 620 629 614 618
					617 598 611 617 614 615 608 603 609 595 604 605
213	42	216	103	0	12706537 12706537 12405946 12405946 12405946 12405946 12152410 12274015 12274015 12274015 12152410 12039964
313	3939				11319588 11319588 11248382 11248382 11161417 11203291 11203291 11159973 11138947 11098098 11098008 11039670
					631 637 640 641 640 630 625 627 622 626 608 625
					619 621 618 612 619 615 615 617 609 616 617 601
213	43	216	104	0	13278938 13278938 13278938 13278938 13068621 0 4 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1
313	3971				11504675 11448846 11448846 11448846 1 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1
					651 639 643 640 647 -77 -77 -77 -77 -77 -77 -77
					626 630 633 622 611 -77 -77 -77 -77 -77 -77 -77
213	44	216	105	0	0 132 0 125 0 149 0 132 0 124 0 -1 1 32816 13775806 13775806 13775806 13775806 13775806 13775806
313	4003				11826916 11756001 11688557 11688557 11688557 11688557 11624334 11624334 11563109 11563109 11563109 11563109
					649 649 651 652 644 -77 -77 645 647 644 604 647
					632 629 630 628 634 623 636 627 629 628 629 624
213	45	216	106	0	0 134 0 157 0 152 0 135 0 130 0 136 0 131 0 136 0 141 0 141 0 148 0 -1
313	4035				12063391 11980290 12063391 11980290 11980290 11901578 11826916 11980290 11901578 11826916 11901578 11826916
					657 658 656 654 657 656 653 653 656 656 652 651
					639 636 640 629 642 641 638 631 640 631 632 639
213	46	216	107	0	0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 158 0 145 0 143 0 131 0 124 0 138
313	4067				0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 12244318 12244318 12244318 12151260 12151260 12151260
					-77 -77 -77 -77 -77 -77 660 658 658 660 650 657
					-77 -77 -77 -77 -77 -77 643 638 641 648 639 645
213	47	216	108	0	0 0 02152410 0 738 0******* 0******* 0 11 0 158 0 145 0 143 0 131 0 124 0 138
313	4099				0 2 0 6 0 1673 0 141575 0 141575 0 1 12244318 12244318 12244318 12151260 12151260 12151260
					-77 -77 -77 -77 -77 -77 660 658 658 660 650 657
					-77 -77 -77 -77 -77 -77 643 638 641 648 639 645
213	48	216	109	0	0 218 0 240 0 236 0 229 0 230 0 233 0 230 0 216 0 236 0 223 0 230 0 231
313	4195				0 561 0 546 0 587 0 578 0 559 0 595 0 578 0 569 0 541 0 554 0 548 0 -1
					687 688 687 685 685 686 685 685 684 685 683 682
					665 667 664 663 664 665 662 662 661 662 661 661
213	49	216	110	0	0 265 0 251 0 272 0 231 0 240 0 242 0 234 0 244 0 223 0 240 0 246 0 -1
313	4227				0 567 0 569 0 578 0 541 0 [illegible] 0 569 0 569 0 548 0 546 0 562 0 567 0 -1
					692 691 691 692 [illegible] 689 690 689 687 688 [illegible] 687
					671 672 671 671 [illegible] 670 670 667 665 667 [illegible] 667

Sample Listing Tapes - Type B

NF	NR	DY	UR	DAY	SECS	LT	GMLT	CODES	--DST	--AP	----AE	-----SF	LAT	LON	GMLAT	GMLON	B	L	E	E	E	E	P	P	P	P	P
31	190	39	7	130	19233	0.046	0.028	1 1 1	-4 3	2 2	88 3	162.8 1	15.20	-79.45	26.37	-9.99	25235	1.525	0	0	0	0	0	0	0	0	0	0
31	191	39	8	130	19265	0.024	0.009	1 1 1	-4 3	2 2	88 3	162.8 1	13.43	-79.91	24.59	-10.42	24555	1.478	0	0	0	0	0	0	0	0	0	0
31	192	39	9	130	19297	0.003	23.990	1 1 1	-4 3	2 2	88 3	162.8 1	11.66	-80.36	22.81	-10.83	23884	1.435	1	1	0	0	0	0	0	0	0	0
31	193	39	10	130	19329	23.981	23.971	1 1 1	-4 3	2 2	88 3	162.8 1	9.88	-80.82	21.03	-11.24	23225	1.397	2	1	0	0	0	0	0	0	0	0
31	194	39	11	130	19361	23.960	23.953	1 1 1	-4 3	2 2	88 3	162.8 1	8.11	-81.26	19.25	-11.63	22585	1.363	2	1	0	0	0	1	1	1	1	1
31	195	39	12	130	19393	23.940	23.936	1 1 1	-4 3	2 2	88 3	162.8 1	6.34	-81.71	17.47	-12.02	21968	1.332	2	1	0	0	0	1	1	1	1	1
31	196	39	13	130	19425	23.919	23.919	1 1 1	-4 3	2 2	88 3	162.8 1	4.56	-82.15	15.69	-12.41	21379	1.306	2	1	0	0	0	2	2	2	2	2
31	197	39	14	130	19457	23.898	23.902	1 1 1	-4 3	2 2	88 3	162.8 1	2.79	-82.60	13.91	-12.78	20822	1.283	2	1	0	0	0	2	2	2	2	2
31	198	39	15	130	19489	23.878	23.886	1 1 1	-4 3	2 2	88 3	162.8 1	1.01	-83.04	12.13	-13.16	20304	1.263	2	1	0	0	0	2	2	2	2	2
31	199	39	16	130	19521	23.857	23.870	1 1 1	-4 3	2 2	88 3	162.8 1	-0.76	-83.48	10.34	-13.52	19827	1.246	2	1	0	0	0	2	2	2	2	2
31	200	39	17	130	19553	23.837	23.854	1 1 1	-4 3	2 2	88 3	162.8 1	-2.54	-83.92	8.56	-13.89	19396	1.232	2	1	0	0	0	2	2	2	2	2
31	201	39	18	130	19585	23.816	23.839	1 1 1	-4 3	2 2	88 3	162.8 1	-4.31	-84.36	6.78	-14.24	19015	1.221	2	1	0	0	0	2	2	2	2	2
31	202	39	19	130	19617	23.795	23.824	1 1 1	-4 3	2 2	88 3	162.8 1	-6.09	-84.81	4.99	-14.60	18687	1.212	2	1	0	0	0	3	3	3	3	2
31	203	39	20	130	19649	23.775	23.809	1 1 1	-4 3	2 2	88 3	162.8 1	-7.86	-85.25	3.21	-14.95	18415	1.206	2	2	1	0	0	3	3	3	3	3
31	204	39	21	130	19681	23.754	23.794	1 1 1	-4 3	2 2	88 3	162.8 1	-9.63	-85.70	1.43	-15.30	18200	1.202	3	2	1	0	0	3	3	3	3	3
31	205	39	22	130	19713	23.732	23.779	1 1 1	-4 3	2 2	88 3	162.8 1	-11.41	-86.15	-0.36	-15.65	18044	1.201	3	2	1	0	0	3	3	3	3	3
31	206	39	23	130	19745	23.711	23.764	1 1 1	-4 3	2 2	88 3	162.8 1	-13.18	-86.61	-2.14	-16.00	17947	1.202	3	2	1	0	0	3	3	3	3	3
31	207	39	24	130	19777	23.689	23.750	1 1 1	-4 3	2 2	88 3	162.8 1	-14.95	-87.07	-3.93	-16.35	17909	1.205	3	2	1	0	0	3	3	3	3	3
31	208	39	25	130	19809	23.667	23.735	1 1 1	-4 3	2 2	88 3	162.8 1	-16.72	-87.53	-5.71	-16.69	17928	1.211	3	2	1	0	0	3	3	3	3	3
31	209	39	26	130	19841	23.644	23.721	1 1 1	-4 3	2 2	88 3	162.8 1	-18.49	-88.00	-7.50	-17.04	18004	1.219	3	2	1	0	0	3	3	3	3	3
31	210	39	27	130	19873	23.621	23.706	1 1 1	-4 3	2 2	88 3	162.8 1	-20.26	-88.48	-9.28	-17.38	18135	1.230	3	2	1	0	0	3	3	3	3	3
31	211	39	28	130	19905	23.598	23.692	1 1 1	-4 3	2 2	88 3	162.8 1	-22.03	-88.97	-11.07	-17.73	18318	1.242	3	2	1	0	0	3	3	3	3	2
31	212	39	29	130	19937	23.574	23.677	1 1 1	-4 3	2 2	88 3	162.8 1	-23.79	-89.46	-12.86	-18.07	18551	1.258	3	2	1	0	0	3	3	3	3	2
31	213	39	30	130	19969	23.549	23.662	1 1 1	-4 3	2 2	88 3	162.8 1	-25.56	-89.97	-14.64	-18.42	18831	1.275	3	2	1	0	0	3	3	3	3	2
31	214	39	31	130	20001	23.523	23.648	1 1 1	-4 3	2 2	88 3	162.8 1	-27.32	-90.49	-16.43	-18.77	19156	1.296	3	2	1	0	0	3	3	3	3	3
31	215	39	32	130	20033	23.497	23.633	1 1 1	-4 3	2 2	88 3	162.8 1	-29.08	-91.01	-18.21	-19.13	19523	1.319	3	2	1	0	0	3	3	3	3	2
31	216	39	33	130	20065	23.470	23.617	1 1 1	-4 3	2 2	88 3	162.8 1	-30.84	-91.56	-20.00	-19.48	19929	1.345	3	3	2	0	0	3	3	3	2	2
31	217	39	34	130	20097	23.442	23.602	1 1 1	-4 3	2 2	88 3	162.8 1	-32.60	-92.11	-21.78	-19.84	20373	1.374	4	3	2	0	0	3	3	3	2	2
31	218	39	35	130	20129	23.412	23.586	1 1 1	-4 3	2 2	88 3	162.8 1	-34.36	-92.69	-23.57	-20.21	20851	1.407	4	3	2	0	0	3	3	3	3	2
31	219	39	36	130	20161	23.382	23.570	1 1 1	-4 3	2 2	88 3	162.8 1	-36.11	-93.28	-25.35	-20.58	21362	1.444	4	3	2	0	0	2	2	2	2	2
31	220	39	37	130	20193	23.350	23.554	1 1 1	-4 3	2 2	88 3	162.8 1	-37.86	-93.89	-27.14	-20.95	21902	1.485	4	3	2	0	0	2	2	2	2	2
31	221	39	38	130	20225	23.316	23.537	1 1 1	-4 3	2 2	88 3	162.8 1	-39.61	-94.53	-28.92	-21.33	22470	1.531	3	3	1	0	0	2	2	2	2	2
31	222	39	39	130	20257	23.281	23.519	1 1 1	-4 3	2 2	88 3	162.8 1	-41.36	-95.19	-30.71	-21.72	23063	1.581	3	2	1	0	0	2	2	2	2	2
31	223	39	40	130	20289	23.244	23.501	1 1 1	-4 3	2 2	88 3	162.8 1	-43.10	-95.88	-32.49	-22.12	23677	1.637	3	2	1	0	0	2	2	2	1	1
31	224	39	41	130	20321	23.204	23.483	1 1 1	-4 3	2 2	88 3	162.8 1	-44.84	-96.61	-34.27	-22.52	24312	1.699	3	2	0	0	0	1	1	1	1	1
31	225	39	42	130	20353	23.162	23.464	1 1 1	-4 3	2 2	88 3	162.8 1	-46.57	-97.37	-36.06	-22.94	24963	1.769	2	1	0	0	0	1	1	1	1	0
31	226	39	43	130	20385	23.118	23.444	1 1 1	-4 3	2 2	88 3	162.8 1	-48.30	-98.17	-37.84	-23.36	25628	1.846	2	0	0	0	0	0	0	0	0	0
31	227	39	44	130	20417	23.070	23.423	1 1 1	-4 3	2 2	88 3	162.8 1	-50.03	-99.02	-39.62	-23.80	26304	1.933	1	0	0	0	0	0	0	0	0	0
31	228	39	45	130	20449	23.019	23.401	1 1 1	-4 3	2 2	88 3	162.8 1	-51.75	-99.92	-41.40	-24.26	26988	2.030	1	0	0	0	0	0	0	0	0	0
31	229	39	46	130	20481	22.964	23.378	1 1 1	-4 3	2 2	88 3	162.8 1	-53.46	-100.88	-43.18	-24.73	27677	2.140	1	0	0	0	0	0	0	0	0	0
31	230	39	47	130	20513	22.904	23.354	1 1 1	-4 3	2 2	88 3	162.8 1	-55.17	-101.91	-44.96	-25.22	28368	2.264	0	0	0	0	0	0	0	0	0	0
31	231	39	48	130	20545	22.839	23.328	1 1 1	-4 3	2 2	88 3	162.8 1	-56.87	-103.02	-46.74	-25.74	29057	2.404	0	0	0	0	0	0	0	0	0	0
31	232	39	49	130	20577	22.768	23.301	1 1 1	-4 3	2 2	88 3	162.8 1	-58.56	-104.22	-48.52	-26.27	29741	2.563	0	0	0	0	0	0	0	0	0	0
31	233	39	50	130	20609	22.689	23.272	1 1 1	-4 3	2 2	88 3	162.8 1	-60.24	-105.53	-50.29	-26.84	30417	2.744	0	0	0	0	0	0	0	0	0	0
31	234	39	51	130	20641	22.602	23.240	1 1 1	-4 3	2 2	88 3	162.8 1	-61.91	-106.97	-52.07	-27.44	31082	2.953	3	2	2	1	0	0	0	0	0	0
31	235	39	52	130	20673	22.505	23.207	1 1 1	-4 3	2 2	88 3	162.8 1	-63.57	-108.56	-53.84	-28.07	31733	3.194	4	4	3	2	1	0	0	0	0	0
31	236	39	53	130	20705	22.397	23.170	1 1 1	-4 3	2 2	88 3	162.8 1	-65.20	-110.32	-55.61	-28.75	32367	3.473	4	4	3	3	1	0	0	0	0	0
31	237	39	54	130	20737	22.274	23.130	1 1 1	-4 3	2 2	88 3	162.8 1	-66.82	-112.30	-57.38	-29.48	32981	3.799	5	4	3	3	1	0	0	0	0	0
31	238	39	55	130	20769	22.133	23.086	2 1 4	-4 3	2 2	88 3	162.8 1	-68.41	-114.54	-59.14	-30.26	33574	4.182	5	4	3	3	1	0	0	0	0	0
31	239	39	56	130	20801	21.972	23.037	2 1 4	-4 3	2 2	88 3	162.8 1	-69.97	-117.08	-60.90	-31.12	34142	4.638	5	4	3	2	1	0	0	0	0	0
31	240	39	57	130	20833	21.786	22.983	2 1 4	-4 3	2 2	88 3	162.8 1	-71.50	-120.02	-62.66	-32.06	34685	5.184	4	3	3	2	1	0	0	0	0	0
31	241	39	58	130	20865	21.567	22.922	2 2 5	-4 3	2 2	88 3	162.8 1	-72.97	-123.43	-64.41	-33.10	35200	5.845	4	3	2	1	0	0	0	0	0	0
31	242	39	59	130	20897	21.310	22.853	2 2 5	-4 3	2 2	88 3	162.8 1	-74.38	-127.42	-66.16	-34.27	35686	6.651	3	2	1	0	0	0	0	0	0	0
31	243	39	60	130	20929	21.005	22.774	2 2 5	-4 3	2 2	88 3	162.8 1	-75.71	-132.13	-67.90	-35.58	36142	7.662	2	1	0	0	0	0	0	0	0	0
31	244	39	61	130	20961	20.641	22.682	2 2 5	-4 3	2 2	88 3	162.8 1	-76.94	-137.73	-69.63	-37.09	36568	8.936	0	0	0	0	0	0	0	0	0	0
31	245	39	62	130	20993	20.207	22.575	2 2 5	-4 3	2 2	88 3	162.8 1	-78.03	-144.36	-71.34	-38.83	36962	10.578	0	0	0	0	0	0	0	0	0	0
31	246	39	63	130	21025	19.696	22.446	3 2 8	-4 3	2 2	88 3	162.8 1	-78.94	-152.16	-73.04	-40.89	37324	12.742	0	0	0	0	0	0	0	0	0	0
31	247	39	64	130	21057	19.107	22.290	3 2 8	-4 3	2 2	88 3	162.8 1	-79.63	-161.14	-74.72	-43.35	37655	15.677	0	0	0	0	0	0	0	0	0	0
31	248	39	65	130	21089	18.452	22.097	3 2 8	-4 3	2 2	88 3	162.8 1	-80.05	-171.09	-76.37	-46.38	37954	19.792	0	0	0	0	0	0	0	0	0	0
31	249	39	66	130	21121	17.762	21.853	3 2 8	-4 3	2 2	88 3	162.8 1	-80.16	178.43	-77.97	-50.16	38222	25.801	0	0	0	0	0	0	0	0	0	0
31	250	39	67	130	21153	17.079	21.537	3 2 8	-4 3	2 2	88 3	162.8 1	-79.95	168.05	-79.52	-55.03	38460	35.087	0	0	0	0	0	0	0	0	0	0
31	251	39	68	130	21185	16.441	21.117	3 2 8	-4 3	2 2	88 3	162.8 1	-79.45	158.35	-80.97	-61.46	38667	50.592	0	0	0	0	0	0	0	0	0	0
31	252	39	69	130	21217	15.975	20.548	3 2 8	-4 3	2 2	88 3	162.8 1	-78.63	148.58	-80.97	-70.19	38811	73.605	0	0	0	0	0	0	0	0	0	0