

	Case	Orbit	Bz in Magnetosheath	MP crossing time (KH duration)	Latitude	LT (equatorial)	TAA (equatorial)	Na+ group counts (10min)			Comment	
								MSH	KH	MSP		
1	Adj_b2	168	15.1	12:27	28.8				11	0		
	Adj_b	169									Scan type changed	
	KH	170	47.2	12:37(12:26 - 12:37)	30.3			0	27	73		
	Adj_a	171	38.4	0:38 (0:21 - 0:38)	25.7	18.9		358.0	0	47	122	
	Adj_a2	172										Scan type changed
2	Adj_b2	169									Scan type changed	
	Adj_b	170									Scan type changed	
	KH	171	38.4	0:38 (0:21 - 0:38)	25.7	18.9		358.0	0	47	122	
	Adj_a	172									Scan type changed	
	Adj_a2	173									Scan type changed	
3	Adj_b2	176	39.6	13:04	34.1				2	54		
	Adj_b	177									Scan type changed	
	KH	178									Scan type changed	
	Adj_a	179									Scan type changed	
	Adj_a2	180	10.9	12:56	26.0				3	38		
4	Adj_b2	339									No MP crossing in data period	
	Adj_b	340										
	KH	341	5.0	20:33	14.4	20.6		352.2	130	15		
	Adj_a	342	15.3	8:01 (7:48 - 8:01)	10.2	20.4		335.2	0	24	97	
	Adj_a2	343	22.2	20:25 (20:15 - 20:25)	7.4	20.1		338.3	0	20	73	
5	Adj_b2	340									Scan type changed	
	Adj_b	341									Scan type changed	
	KH	342	15.3	8:01 (7:48 - 8:01)	10.2	20.4		335.2	0	24	97	
	Adj_a	343	22.2	20:25 (20:15 - 20:25)	7.4	20.1		338.3	0	20	73	
	Adj_a2	344	27.4	8:41	24.0	19.9		341.4	14	20	7	
6	Adj_b2	342	23.4	20:25 (20:15 - 20:25)	13.1	19.7		344.6	1	9	45	
	Adj_b	343	27.1	8:41	24.0	19.9		341.4	0	20	24	
	KH	344	27.4	20:32 (20:21 - 20:32)	12.1	19.7		344.6	0	9	38	
	Adj_a	345	50.1	8:44 (8:20 - 8:41)	25.2	19.5		347.7	0	23	75	
	Adj_a2	346									Scan type changed	
7	Adj_b2	343	27.1	8:41	24.0	19.9		341.4	14	7		
	Adj_b	344	27.4	20:32 (20:21 - 20:32)	12.1	19.7		344.6	0	9	38	
	KH	345	50.1	8:44 (8:20 - 8:41)	25.2	19.5		347.7	0	23	75	
	Adj_a	346									Scan type changed	
	Adj_a2	347	8:40	22.4	19.1			344.6	1	1	9	
8	Adj_b2	515									No MP crossing in data period	
	Adj_b	516										
	KH	517	23.7	09:21 (9:07 - 9:21)	-2.5	20.7		329.6	0	33	140	
	Adj_a	518	12.1	21:30	5.0	20.5		332.6	93	52	32	
	Adj_a2	519	9.9	9:37	12.3	20.3		335.7	111	59	59	
9	Adj_b2	518	12.1	21:30	5.0	20.5		332.6	93	52		
	Adj_b	519	9.9	9:37	12.3	20.3		335.7	111	59		
	KH	520	20.1	21:24 (21:09 - 21:24)	0.2	20.1		338.8	0	47	133	
	Adj_a	521	7.5	9:26	1.7	19.9		341.9	50	21	21	
	Adj_a2	522	38.9	21:32 (21:11 - 21:32)	7.3	19.6		345.0	0	14	209	
10	Adj_b2	520	20.1	21:24 (21:09 - 21:24)	0.2	20.1		338.8	0	47	133	
	Adj_b	521	7.5	9:26	1.7	19.9		341.9	50	21		
	KH	522	38.9	21:32 (21:11 - 21:32)	7.3	19.6		345.0	0	14	209	
	Adj_a	523	51.6	9:25 (9:11 - 9:24)	0.9	19.4		348.2	0	19	103	
	Adj_a2	524	46.0	21:38 (21:14 - 21:38)	15.1	19.2		351.3	0	32	222	

Sundberg-Gershman events(nightside)

	Case	Orbit	Bz in Magnetosheath	MP crossing time (KH duration)	Latitude	LT (equatorial)	TAA (equatorial)	Na+ group counts (10min)			Comment
								MSH	KH	MSP	
11	Adj_b2	521	7.5	9:26	1.7	19.9		341.9	50	21	
	Adj_b	522	38.9	21:32 (21:11 - 21:32)	7.3	19.6		345.0	0	14	209
	KH	523	52.7	9:25 (9:11 - 9:24)	0.1	19.4		348.2	0	19	175
	Adj_a	524	46.6	21:38 (21:14 - 21:38)	13.9	19.2		351.3	0	32	222
	Adj_a2	525	18.3	9:38	13.7	19.0		354.5	0	3	27
12	Adj_b2	522	38.9	21:32 (21:11 - 21:32)	7.3	19.6		345.0	0	14	209
	Adj_b	523	32.7	9:25 (9:11 - 9:24)	0.1	19.4		348.2	0	19	175
	KH	524	46.6	21:38 (21:14 - 21:38)	13.9	19.2		351.3	0	32	222
	Adj_a	525	19.3	9:38	13.7	19.0		354.5	71	27	
	Adj_a2	526	5.8	21:30	5.5	18.8		357.7	3	3	27
13	Adj_b2	527	2.7	9:39	15.0	18.6		0.9	3	14	
	Adj_b	528	20.5	21:29	12.1	18.4		0.0	0	18	30
	KH	529	62.7	9:22 (9:08 - 9:22)	13.2	18.2		7.1	0	62	105
	Adj_a	530	27.9	21:10	10.7	18.0		355.0	0	2	11
	Adj_a2	531	21.1	8:56	14.7				13	21	
14	Adj_b2	696	32.8	9:28	-32.4				1	1	
	Adj_b	697	4.9	21:27	9.0	20.4		332.8	156	36	
	KH	698	12.3	8:53 (8:35 - 8:45)	-10.1	20.2		335.8	0	2	156
	Adj_a	699	0.0	20:45	-8.5	20.0		338.8	19	82	
	Adj_a2	700	21.2	8:44	4.5	19.8		341.9	19	27	
15	Adj_b2	703									low FIPS resolution
	Adj_b	704									No MP crossing in data period
	KH	705	56.8	19:49 (19:39 - 19:49)	15.9	18.8		357.4	0	32	175
	Adj_a	706	34.2	7:35	14.3	18.5		0.5	1	53	231
	Adj_a2	707	63.6	19:36	29.0				0	93	216
16	Adj_b2	704									No MP crossing in data period
	Adj_b	705	56.8	19:49 (19:39 - 19:49)	15.9	18.8		357.4	0	32	175
	KH	706	34.2	7:35 (7:29 - 7:35)	14.3	18.5		0.5	1	53	231
	Adj_a	707	63.6	19:36 (19:19 - 19:36)	29.0				0	93	216
	Adj_a2	708	22.4	7:11	22.7				3	99	216
17	Adj_b2	705	56.8	19:49 (19:39 - 19:49)	15.9	18.8		357.4	0	32	175
	Adj_b	706	34.2	7:35 (7:29 - 7:35)	14.3	18.5		0.5	1	53	231
	KH	707	64.2	19:30 (19:19 - 19:30)	27.1				0	93	227
	Adj_a	708	54.4	7:11	22.7				73	86	
	Adj_a2	709									No MP crossing in data period
18	Adj_b2	915	14.1	14:38	4.4	20.0		337.4	5	14	
	Adj_b	916	10.7	21:27	2.9	19.9		339.5	0	0	7
	KH	917	62.0	6:40 (6:31 - 6:40)	8.8	19.7		341.6	3	55	126
	Adj_a	918	20.3	14:34	0.2	19.6		343.7	0	291	58
	Adj_a2	919	41.8	22:44 (22:15 - 22:44)	15.4	19.5		345.8	0	55	233
19	Adj_b2	917	62.0	6:40 (6:31 - 6:40)	8.8	19.7		341.6	3	55	126
	Adj_b	918	20.3	14:34	0.2	19.6		343.7	0	291	58
	KH	919	41.8	22:44 (22:15 - 22:44)	15.4	19.5		345.8	0	291	233
	Adj_a	920	18.7	6:30	5.1	19.3		347.9	0	0	0
	Adj_a2	921	66.2	14:45 (14:35 - 14:45)	16.3	19.2		350.0	0	0	0
20	Adj_b2	919	41.8	22:44 (22:15 - 22:44)	13.6	19.5		345.8	0	291	254
	Adj_b	920	27.5	6:30	25.1	19.3		347.9	0	0	0
	KH	921	66.2	14:45 (14:35 - 14:45)	16.3	19.2		350.0	0	0	0
	Adj_a	922	15.4	22:38	3.1	19.0		352.1	0	0	0
	Adj_a2	923									No Na count

Sundberg-Gershman events(nightside)

Case	Orbit	Bz in Magnetosheath	MP crossing time (KH duration)	Latitude	LT (equatorial)	TAA (equatorial)	Na+ group counts (10min)			Comment	
							MSH	KH	MSP		
Sundberg-Gershman events (nightside)	21	Adj_b2	1177	19.9	23:05	21.9	20.2	333.6	57	0	
		Adj_b	1178	16.1	7:00	11.7	20.1	335.6	137	32	
		KH	1179	22.2	14:51 (14:40 - 14:51)	-9.9	19.9	337.7	16	73	176
	22	Adj_a	1180	17.9	22:46	-8.5	19.8	339.8	38	53	25
		Adj_a2	1181	8.2	6:57	6.0	19.7	341.8	46	53	28
		KH	1182	19.4	14:55 (14:40 - 14:51)	2.7	19.5	343.9	0	74	24
	23	Adj_a	1183	-2.6	22:55	2.7	19.4	346.0	20	28	28
		Adj_a2	1184	22.6	6:54	0.9	19.3	348.1	42	29	29
		KH	1185	8.4	6:57	6.0	19.7	341.8	46	53	28
	24	Adj_b2	1442	13.2	7:18	9.9	20.0	335.9	146	11	
		Adj_b	1443	17.5	15:15	4.4	19.9	338.0	76	24	
		KH	1444	29.5	23:11 (22:58 - 23:11)	-1.9	19.7	340.0	0	41	38
25	Adj_a	1445	33.9	7:18 (7:05 - 7:18)	8.7	19.6	342.1	0	58	24	
	Adj_a2	1446	22.2	15:18	8.5	19.5	344.2	0	56	44	
	KH	1447	17.5	15:15	4.4	19.9	338.0	76	24		
26	Adj_b2	1451	-17.7	7:09	-6.7	18.8	354.7	58	32		
	Adj_b	1452	15.6	15:13	-1.3	18.5	356.9	23	12		
	KH	1453	23.9	23:18 (23:10 - 23:18)	6.4	18.5	359.0	1	28	40	
27	Adj_a	1454	50.2	7:14	-0.3	18.3	371.1	11	11	13	
	Adj_a2	1455	-48.5	15:28	27.1	18.2	373.2	3	3	19	
	KH	1456	41.9	23:20 (23:12 - 23:20)	9.3	18.1	375.3	5	3	19	
28	Adj_a	1457	34.4	7:20 (7:10 - 7:20)	9.2	17.9	377.4	0	140	61	
	Adj_a2	1458	51.0	15:26	21.4	17.8	379.5	0	144	217	
	KH	1459	-24.0	23:21	10.5	17.6	381.6	20	20	32	
29	Adj_b2	1699	1.8	23:35	2.8	20.9	322.1	80	19		
	Adj_b	1700	16.5	7:32	-2.4	20.8	324.1	64	25		
	KH	1701	21.7	15:29 (15:18 - 15:29)	-6.9	20.6	326.0	0	55	124	
30	Adj_a	1702	10.8	7:39	7.4	20.5	328.1	76	17		
	Adj_a2	1703	14.8	15:32	9.2	20.4	330.1	10	36		
	KH	1704	17.2	23:39	7.4	19.7	340.3	57	41		
31	Adj_b	1709	5.5	7:27	-11.6	19.5	342.4	5	16		
	Adj_b2	1710	25.1	15:29 (15:24 - 15:29)	-9.0	19.4	344.5	1	50	129	
	KH	1711	38.2	23:38 (23:34 - 23:38)	3.6	19.3	346.6	38	179	247	
32	Adj_a	1712	27.6	7:21	-18.9	19.1	348.7	18	57		
	Adj_a2	1713	-1.8	15:26	-14.1	19.0	350.8	31	34		
	KH	1714	17.5	7:45 (7:38 - 7:45)	16.3	18.7	355.0	7	88	162	
33	Adj_a	1715	46.2	15:38 (15:34 - 15:38)	1.9	18.5	357.1	18	25	102	
	Adj_a2	1716	52.3	23:43 (23:35 - 23:43)	13.9	18.4	359.3	28	364	244	
	KH	1717	5.3	7:41	7.1	18.3	361.4	70	191		
34	Adj_b2	1718	73.8	7:45 (7:38 - 7:45)	16.3	18.7	355.0	7	88	162	
	Adj_b	1719	46.2	15:38 (15:34 - 15:38)	1.9	18.5	357.1	18	25	102	
	KH	1720	52.3	23:43 (23:35 - 23:43)	13.9	18.4	359.3	28	364	244	
35	Adj_a	1721	5.3	7:41	7.1	18.3	361.4	70	191		
	Adj_a2	1722	42.0	15:43	10.8	18.1	363.5	125	396		
	KH	1723	71.1	7:41	7.1	18.3	361.4	70	191		

Case	Orbit	Bz in Magnetosheath	MP crossing time (KH duration)	Latitude	LT (equatorial)	TAA (equatorial)	Na+ group counts (10min)			Comment	
							MSH	KH	MSP		
Sundberg-Gershman events (nightside)	31	Adj_b2	1709	5.5	7:27	-11.6	19.5	342.4	5	16	
		Adj_b	1710	25.1	15:29 (15:24 - 15:29)	-9.0	19.4	344.5	1	50	129
		KH	1711	38.2	23:38 (23:34 - 23:38)	3.6	19.3	346.6	38	179	247
	32	Adj_a	1712	27.6	7:21	-18.9	19.1	348.7	18	57	
		Adj_a2	1713	-1.8	15:26	-14.1	19.0	350.8	31	34	
		KH	1714	17.5	7:45 (7:38 - 7:45)	16.3	18.7	355.0	7	88	162
	33	Adj_a	1715	46.2	15:38 (15:34 - 15:38)	1.9	18.5	357.1	18	25	102
		Adj_a2	1716	52.3	23:43 (23:35 - 23:43)	13.9	18.4	359.3	28	364	244
		KH	1717	5.3	7:41	7.1	18.3	361.4	70	191	
	34	Adj_b2	1718	73.8	7:45 (7:38 - 7:45)	16.3	18.7	355.0	7	88	162
		Adj_b	1719	46.2	15:38 (15:34 - 15:38)	1.9	18.5	357.1	18	25	102
		KH	1720	52.3	23:43 (23:35 - 23:43)	13.9	18.4	359.3	28	364	244
35	Adj_a	1721	5.3	7:41	7.1	18.3	361.4	70	191		
	Adj_a2	1722	42.0	15:43	10.8	18.1	363.5	125	396		
	KH	1723	71.1	7:41	7.1	18.3	361.4	70	191		