S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01	0000	0733	HIRA								
	0000	0800	CULG								
	0839	1332	ONDR								
	0850	1440	BLEN								
	0815	1405	POTS	1146.5	1147.0	III	G	1	40X	70	100-200MHz no data
	2000	2400	CULG								
	2148	2400	HIRA								
02	0000	0734	HIRA								
	0000	0800	CULG								
	0838	1333	ONDR								
	0850	1440	BLEN								
	0814	1405	POTS	1224.2	1235.7	III	G,N	1	40X	85	100-200MHz no data
	2000	2400	CULG	2310.0	2310.0	III	B	1	60	90	
			LEAR	2312.0	2314.0	III		1	25	180	
			CULG	2313.0	2314.0	III	G	3	18	260	
			HOLL	2313.0	2314.0	III		1	25	77	
	2148	2400	HIRA	2313.0	2314.0	III	B	1	25X	220	
03	0000	0735	HIRA	0151.5	0152.0	III	B	1	200	310	
			LEAR	0515.0	0515.0	III		1	25	60	
	0000	0800	CULG	0515.0	0516.0	III	G	1	35	85	
			CULG	0602.0	0602.0	III	B	1	40	90	
	0813	1405	POTS	0935.4	0935.6	III	B,U	1	200U	280	100-200MHz no data
	0704	1200	IZMI	0935.5	0936.0	III	G	1	55	150	
			POTS	0944.2	0944.9	I	DC	1	280	350	
			POTS	1242.0	1245.1	III	G	1	45	85	
			POTS	1248.4	1250.3	III	G	1	200U	350	
	0838	1335	ONDR	1325.2	1325.5	DCIM	GG	2	1269	1934	
			SGMR	1421.0	1422.0	III		2	30	80	
			SVTO	1421.0	1428.0	III		2	25	180	
	0850	1440	BLEN	1421.4	1422.0	III	G	2	100X	350	
			HOLL	1819.0	1820.0	III		1	25	130	
	2000	2400	CULG	2053.0	2054.0	III	G	1	18	180	
			CULG	2119.0	2120.0	III	B	1	18	180	
	2148	2400	HIRA								
			CULG	2210.0	2213.0	III	G	2	18	90	
			CULG	2303.0	2303.0	III	G	1	18	150	
04			LEAR	0142.0	0142.0	III		1	65	180	
			PALE	0142.0	0142.0	III		1	98	180	
	0000	0736	HIRA	0142.0	0142.5	III	B	3	70	400	
	0000	0800	CULG	0142.0	0142.0	III	B	2	50U	500	
			CULG	0210.0	0212.0	III	G	1	23	130	
			CULG	0358.0	0358.0	III	B	1	35	80	
			CULG	0507.0	0507.0	III	B	1	35	80	
			CULG	0553.0	0553.0	III	B	1	23	80	
	0700	1200	IZMI	0700.0E	0930.0U	I	N	1	110	250	
			IZMI	0711.2	0711.4	CONT		1	155	190	
	0813	1406	POTS	0816 U	1012 U	I	S,N	1	200U	300	100-200MHz no data
	0837	1336	ONDR								
	0850	1440	BLEN								
			POTS	1102	1313	I	S,N,DC	1	45	340	
			IZMI	1112.1	1112.4	III	G	1	110	155	
			POTS	1115.3	1115.4	III	B	1	200U	320	
			IZMI	1128.2	1128.4	III	G	1	125	160	
	2000	2400	CULG								
	2149	2400	HIRA								
05	0000	0800	CULG	0123.0	0123.0	III	B	1	57U	180	
			CULG	0130.0	0130.0	III	G	1	80	190	
			LEAR	0130.0	0130.0	III		1	114	180	
	0000	0737	HIRA	0130.0	0130.5	III	B	1	100	210	
			CULG	0602.0	0651.0	III	N	1	30	180	
	0700	1200	IZMI	0705.0U	0732.0U	I	N	1	80	160	
			IZMI	0722.4	0723.7	III	GG,FS,C	2	40	270X	
			HIRA	0722.5	0723.5	III	B	1	40	300	
			CULG	0723.0	0736.0	III	GG	3	20	180	
			IZMI	0726.5	0728.6	II	HARM	2	120	215	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
05			IZMI	0726.8	0732.2	III	GG	2	45	210	
			LEAR	0727.0	1007.0	III	N	1	25	180	
			IZMI	0754.7	0754.8	III	B	1	45	95	
			IZMI	0757.5	0758.1	III	G	1	45	95	
			CULG	0758.0	0758.0	III	G	1	30	80	
	0837	1338	ONDR								
	0812	1407	POTS	0952.3	0955.1	DCIM		2	220	540	100-200MHz no data
			IZMI	1001.5	1006.9	II		1	50U	95	
			POTS	1025	1332 U	I	S,N	1	220	380	
			POTS	1119.8	1120.2	DCIM		2	220	440	
			POTS	1200	1205.4	DCIM		2	200U	440	
	0850	1440	BLEN	1205.0X	1206.4	DCIM	S,C	2	200	4000X	
	2000	2400	CULG	2014.0	2014.0	III	G	1	25	80	
			CULG	2019.0	2019.0	III	B	1	23	70	
			CULG	2141.0	2141.0	III	B	1	20	130	
	2149	2400	HIRA								
06	0000	0800	CULG	0242.0	0243.0	III	G	1	150	320	
	0000	0738	HIRA	0242.5	0243.0	III	B	1	130	300	
			LEAR	0409.0	0411.0	V		2	25	180	
			HIRA	0409.5	0411.0	III	B	3	25X	200	
			CULG	0410.0	0412.0	III	G	3	18X	190	
			HIRA	0627.5	0628.0	III	B	1	50	100	
			CULG	0628.0	0628.0	III	B	1	18	90	
	0652	1200	IZMI	0813.7	0814.3	III	G	1	45	85	
	0812	1408	POTS	0817 U	1124	I	S,N	1	200U	380	100-200MHz no data
	0839	1339	ONDR								
	0850	1450	BLEN	0932.0	0945.5	DCIM	P	2	200	4000X	
			IZMI	0933.6	0936.9	III	G	1	110	270	
			POTS	0934	0942	DCIM		1	200U	480	
			IZMI	1002.0	1006.9	I	N	1	120	150	
			POTS	1002.1	1004.1	III	G	2	40X	80	
			POTS	1042	1050	III	GG	1	40X	80	
			POTS	1149.8	1152.3	DCIM		2	200U	480	
			IZMI	1151.6	1151.9	III	G	2	180	270X	
			POTS	1201.5	1318 U	I	S,N	1	200U	330	
			POTS	1238.0	1238.6	III	G	2	40X	80	
			POTS	1329.0	1329.4	III	B	3	40X	85U	
			POTS	1349.5	1349.7	III	B	2	40X	85U	
			POTS	1400.1	1401.3	DCIM		2	200U	400U	
			HOLL	1424.0	1426.0	III		1	25U	180U	
			SGMR	1424.0	1426.0	III		2	30	80	
			SVTO	1424.0	1425.0	III		2	25	180	
			HOLL	1447.0	1448.0	III		1	25	180	
			SVTO	1447.0	1447.0	III		1	58	83	
			HOLL	1452.0	1610.0	CONT		1	25	83	
			HOLL	1528.0	1528.0	III		1	25	180	
			HOLL	1926.0	2005.0	III	N	1	25	180	
			HOLL	2109.0	2125.0	III		1	25	84	
	2000	2400	CULG	2109.0	2109.0	III	B	1	50	130	
			CULG	2123.0	2126.0	III	G	1	25	150	
			CULG	2136.0	2136.0	III	G	1	40U	100	
	2149	2400	HIRA	2347.5	2348.0	III	B	1	200	620	
			CULG	2348.0	2348.0	III	B	1	300	670	
07	0000	0739	HIRA								
	0654	1200	IZMI	0706.0	0821.0U	I	N	1	160	210	
			IZMI	0714.0	0714.3	III	G	1	120	210	
	0000	0800	CULG	0746.0	0748.0	III	G	1	18	57	
			LEAR	0747.0	0747.0	III		1	25	55	
			SVTO	0747.0	0747.0	III		1	25U	67U	
			LEAR	0754.0	0800.0	III		1	25	111	
			CULG	0756.0	0800.0D	III	G	2	20	130	
			IZMI	0757.0	0758.5	III	G	1	40	165	
	0811	1409	POTS	0820 U	1000	I	S,N	1	200U	400	100-200MHz no data
	0836	1341	ONDR								
			POTS	0849.1	0850.2	III	G	1	40X	60	
	0850	1450	BLEN								
			POTS	1003	1018	III	GG,N	1	40X	80	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
07			IZMI	1011.8	1012.0	III	B	1	110	170	
			POTS	1033	1409 U	I	S,N	1	200U	380	
	2000	2400	CULG	2000.0E	2031.0	III	N	1	20	60	
	2149	2400	HIRA								
08	0000	0740	HIRA								
	0000	0800	CULG	0153.0	0157.0	III	G	1	23	80	
			CULG	0542.0	0542.0	III	B	1	18	90	
			CULG	0656.0	0658.0	III	G	1	23	160	
			LEAR	0656.0	0658.0	III		1	25	180	
	0703	1200	IZMI	0720.0	0720.3	III	G	1	180	270X	
	0810	1409	POTS	0810 E	1409 U	I	S,N,DC	2	200U	380	100-200MHz no data
			IZMI	0811.3	0811.5	III	G	1	180	270X	
	0835	1343	ONDR								
	0850	1500	BLEN								
			IZMI	0956.0U	1200.0D	I	N	1	180U	270	
			IZMI	1047.4	1049.2	III	G	1	180	270X	
			SVTO	1141.0	1142.0	III		1	35	152	
			IZMI	1141.8	1141.9	III	B	2	95U	175	
			POTS	1141.8	1142.1	III	G	2	40X	85U	
			SVTO	1205.0	1206.0	III		2	40	180	
			POTS	1205.6	1206.6	III	G	3	40X	350	
			SVTO	1248.0	1421.0	CONT		1	50	180	
			POTS	1251.7	1252.9	III	G	1	40X	65	
			POTS	1259.2	1259.5	III	B	1	40X	55	
			POTS	1320.9	1321.3	III	G	1	40X	80	
			POTS	1348.4	1348.7	III	B	2	40X	85U	
			HOLL	1528.0	1528.0	III		1	25	180	
	2000	2400	CULG	2020.0	2020.0	III	B	1	27	90	
			CULG	2050.0	2055.0	III	G	1	27	90	
			CULG	2138.0	2138.0	III	B	1	57U	90	
			CULG	2202.0	2202.0	III	B	1	60U	160	
			CULG	2225.0	2226.0	III	G	1	27	90	
			CULG	2238.0	2249.0	III	G	1	18	100	
	2149	2400	HIRA	2243.0	2243.5	III	B	1	25X	100	
			CULG	2258.0	2258.0	III	B	1	27	90	
			CULG	2307.0	2308.0	III	G	1	35	90	
09			LEAR	0134.0	0142.0	III		1	25	180	
	0000	0800	CULG	0134.0	0142.0	III	G	1	18	140	
	0000	0740	HIRA	0134.5	0142.5	III	G	1	40	200	
			LEAR	0334.0	0339.0	III		1	25	180	
			HIRA	0334.5	0339.0	III	G	1	40	200	
			CULG	0335.0	0339.0	III	G	3	20	180	
			CULG	0341.0	0420.0	III	N	1	20	160	
			LEAR	0355.0	0356.0	III		1	25	109	
			HIRA	0355.5	0356.0	III	B	1	50	70	
			LEAR	0410.0	0411.0	III		1	25	86	
			CULG	0437.0	0438.0	III	G	1	25	180	
			HIRA	0437.5	0438.0	III	B	1	60	140	
			CULG	0624.0	0631.0	III	G	1	35	90	
			HIRA	0642.5	0643.0	III	B	1	70	110	
			CULG	0643.0	0643.0	III	B	1	40	140	
	0700	1200	IZMI	0722.7	0722.8	III	G,U	1	230	270X	
	0810	1410	POTS	0810 E	1042 U	I	S,N	1	200U	380	100-200MHz no data
			IZMI	0846.7	0846.9	III	G,C	2	225	270X	
			POTS	0846.7	0847.0	DCIM		2	230	360	
			LEAR	0955.0	0956.0	III		1	25	180	
			SVTO	0955.0	0956.0	III		1	25	180	
			IZMI	0955.3	0956.4	III	GG	2	30	270X	
			POTS	0955.8	0956.5	III	GG	2	40X	500	
			POTS	1000.4	1005.0	DCIM		1	270	450	
			IZMI	1021.7	1021.8	III	B	2	245	270X	
			IZMI	1046.0	1046.1	III	B	1	110U	160	
			POTS	1234	1250	III	GG	2	40X	300	
	0834	1345	ONDR	1320.4	1321.0	DCIM		1	2000X	4500X	
	0850	1500	BLEN	1320.8	1321.2	DCIM	S,C	2	600	4000X	
			POTS	1322.0	1322.1	III	B	1	40X	60	
			POTS	1356	1410 U	I	S,N	1	200U	300	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
09			HOLL	1456.0	1456.0	III		1	25	180	
			SGMR	1456.0	1456.0	III		1	30	80	
			SVTO	1456.0	1456.0	III		1	56U	180U	
			HOLL	1917.0	2015.0	III	N	2	25	180	
			SGMR	1926.0	1937.0	III	N	1	30	80	
	2000	2400	CULG	2021.0	2021.0	III	G	1	25	45	
			HOLL	2110.0	2112.0	V		2	25	180	
			PALE	2110.0	2112.0	V		1	25	180	
			CULG	2111.0	2111.0	III	B	3	18X	500	
			CULG	2111.0	2112.0	V		3	20	100	
			CULG	2112.0	2113.0	III	G	1	27U	100	
			CULG	2142.0	2146.0	III	G	1	25	180	
			HOLL	2142.0	2145.0	III		1	25	122	
			CULG	2225.0	2330.0	III	N	1	23	160	
			LEAR	2330.0	2330.0	III		1	25	180	
	2149	2400	HIRA	2330.0	2330.5	III	B	1	40	150	
10	0000	0800	CULG	0006.0	0006.0	III	G	1	40	120	
			CULG	0056.0	0206.0	III	N	1	30	170	
			CULG	0244.0	0302.0	III	N	1	20	120	
			LEAR	0440.0	0440.0	III		1	25	180	
	0000	0741	HIRA	0440.5	0441.0	III	B	1	60	150	
			CULG	0441.0	0523.0	III	N	1	27	180	
			CULG	0716.0	0719.0	III	G	1	27	90	
			CULG	0729.0	0751.0	III	N	1	35	140	
			CULG	0735.0	0736.0	III	G	1	30	400	
	0700	1200	IZMI	0735.3	0736.3	III	GG	2	55	270X	
			IZMI	0803.9	0804.0	III	B	1	35	65	
	0808	1412	POTS	0820 U	0842	I	S,N	1	200U	330	100-200MHz no data
			POTS	0831.2	0832.7	DCIM		1	200U	460	
	0833	1346	ONDR								
	0850	1500	BLEN								
			IZMI	0906.9	0907.0	III	G	1	75	140	
			POTS	0945.0	0945.2	DCIM		1	220	400	
			IZMI	0945.8	0946.3	III	G	1	45	85	
			POTS	1058	1350 U	I	S,N	1	200U	320	
			POTS	1249.9	1250.2	III	B	1	40X	80	
			HOLL	1600.0	1600.0	III		1	25	92	
	2000	2400	CULG	2041.0	2041.0	III	B	1	18	45	
			CULG	2113.0	2116.0	III	G	2	18	180	
			HOLL	2114.0	2115.0	III		1	25	180	
			PALE	2114.0	2115.0	III		1	29	46	
			CULG	2222.0	2308.0	III	N	1	18	90	
			CULG	2314.0	2400.0D	III	S	1	20	140	
			LEAR	2315.0	0400.0	III	N	1	25	180	
	2148	2400	HIRA	2335.0	2414.0	III	G	1	25X	200	
			PALE	2343.0	0348.0	CONT		1	25	180	
			CULG	2345.0	2400.0D	III	GG	2	18	180	
11			CULG	0000.0E	0001.0	III	G	2	18	180	
	0000	0800	CULG	0000.0E	0332.0	III	S,C	1	18	180	
			LEAR	0436.0	0437.0	III		1	25	50	
			CULG	0437.0	0437.0	III	B	1	20	70	
	0000	0742	HIRA	0450.5	0451.0	III	B	1	110	210	
			CULG	0451.0	0451.0	III	G	1	57	180	
			LEAR	0522.0	0523.0	III		1	25	180	
			HIRA	0522.5	0523.0	III	B	2	50	330	
			CULG	0523.0	0523.0	III	B	1	30	360	
			LEAR	0532.0	0533.0	III		1	25	61	
			HIRA	0532.5	0533.0	III	B	1	30	110	
			CULG	0533.0	0533.0	III	B	1	23	90	
			CULG	0631.0	0655.0	III	GG	1	23	180	
			LEAR	0634.0	1055.0	III	N	1	25	180	
			HIRA	0635.0	0639.0	III	G	1	40	200	
			SVTO	0636.0	0636.0	III		1	25	40	
	0736	1200	IZMI	0808.0U	1005.0U	III	N	1	40	270X	
	0806	1414	POTS	0821 U	1414 U	I	S,N	1	200U	370	100-200MHz no data
	0832	1348	ONDR								
	0850	1500	BLEN								

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
11			IZMI	0919.0U	0950.0U	III	S	2	35	270X	
			POTS	0922	0945	III	GG,N	1	40X	85U	
			SVTO	0930.0	1117.0	III	N	1	25U	180U	
			POTS	0957.0	1000.7	III	G	3	40X	85U	
			IZMI	1000.2	1000.6	III	G,S	2	25X	135	
			IZMI	1024.6	1026.4	I	GG	2	55	85	
			IZMI	1119.0	1200.0D	I	S	2	110U	180	
			POTS	1247.0	1248.0	DCIM		2	260	350	
			POTS	1323.1	1323.3	III	B	1	40X	80	
			SVTO	1405.0	1406.0	III		1	25U	84U	
			POTS	1405.2	1406.3	III	G	3	40X	85U	
			HOLL	1445.0	1447.0	III		1	25	180	
			SGMR	1445.0	1448.0	III		2	30	80	
			SVTO	1445.0	1447.0	III		1	25U	180U	
	2000	2400	CULG	2000.0E	2043.0	III	N	1	18	90	
			CULG	2019.0	2152.0	I	S	1	60	90	
			CULG	2137.0	2139.0	III	G	2	20	140	
			HOLL	2137.0	2139.0	III		1	25	133	
			PALE	2137.0	2139.0	III		1	25	55	
			CULG	2235.0	2237.0	III	G	1	20	160	
			HOLL	2241.0	2242.0	III		1	25	114	
			LEAR	2241.0	2242.0	III		1	25	118	
			PALE	2241.0	2242.0	III		1	25	58	
	2148	2400	HIRA	2241.5	2242.0	III	B	1	25X	100	
			CULG	2242.0	2242.0	III	B	2	18X	90	
12	0000	0800	CULG	0030.0	0044.0	III	G	1	23	90	
			LEAR	0042.0	0055.0	III	N	1	25	135	
			CULG	0055.0	0055.0	III	B	2	18X	130	
			CULG	0119.0	0121.0	III	G	1	20	90	
			CULG	0146.0	0155.0	III	G	1	20	160	
			LEAR	0151.0	0155.0	III		1	25	180	
	0000	0743	HIRA	0153.5	0155.5	III	G	1	25X	140	
			CULG	0221.0	0250.0	III	N	1	20	90	
			CULG	0316.0	0319.0	III	G	3	18X	90	
			HIRA	0316.0	0319.0	III	G	2	25X	110	
			LEAR	0316.0	0321.0	III		1	25	116	
			CULG	0321.0	0419.0	III	N	1	18	90	
			LEAR	0406.0	0416.0	III		1	25	180	
			CULG	0410.0	0418.0	III	GG	3	18	240	
			HIRA	0410.0	0418.0	III	G	2	25X	310	
			CULG	0531.0	0531.0	III	B	1	35	70	
			CULG	0616.0	0616.0	III	B	1	100	200	
			HIRA	0616.0	0616.5	III	B	1	160	220	
			CULG	0724.0	0800.0D	III	N	2	18X	180	
			LEAR	0727.0	0827.0	III	N	1	25	180	
			SVTO	0727.0	1517.0	III	N	1	25	180	
	0700	1200	IZMI	0727.0	0829.0U	III	N	1	45	95	
			IZMI	0727.2	0735.0	III	GG	2	40	175	
			IZMI	0736.9	0739.1	III	GG	2	45	95	
			IZMI	0757.1	0757.3	UNCLF		2	45	65	
			IZMI	0758.9	0759.4	III	G	2	35	85	
			IZMI	0815.7	0823.4	III	GG,C	2	30	175	
	0804	1417	POTS	0818.3U	0821.5	III	GG	1	40X	80	100-200MHz no data
			IZMI	0826.2	0828.2	III	G	1	55	90	
	0830	1350	ONDR								
	0850	1500	BLEN								
			POTS	0906.2	0906.8	DCIM		2	200U	310	
			POTS	1055.7	1056.1	DCIM		1	200U	280	
			IZMI	1055.8	1056.0	III	G	1	225	270X	
			POTS	1127	1142	I	S,N	1	200U	280	
			IZMI	1156.4	1156.8	III	G	2	45	170	
			POTS	1156.4	1157.0	III	G	2	40X	310	
			POTS	1158.8	1203.0	III	G	2	210	400	
			POTS	1300.8	1301.2	III	G	2	220	320	
			POTS	1303.7	1303.9	DCIM		1	270	290	
			POTS	1304.0	1304.2	III	B	1	40X	80	
			POTS	1321	1339	III	GG,N	1	200U	380	
			POTS	1406	1417 U	III	GG,N	1	40X	80	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
12	2000	2400	CULG	2100.0	2101.0	III	G	1	30	180	
			CULG	2308.0	2312.0	III	G	1	25	130	
	2148	2400	HIRA	2308.0	2312.5	III	G	1	30	210	
			CULG	2358.0	2359.0	III	G	3	18X	700	
			HIRA	2358.0	2405.0	III	G	2	25X	400	
13	0000	0800	CULG	0002.0	0008.0	III	G	3	18X	450	
	0000	0744	HIRA	0033.5	0034.0	III	B	1	40	110	
			CULG	0034.0	0034.0	III	B	1	18	90	
			LEAR	0034.0	0034.0	III		1	25	104	
			CULG	0042.0	0042.0	III	B	1	18	90	
			CULG	0136.0	0150.0	III	GG	1	20	170	
			HIRA	0138.0	0143.5	III	G	1	25X	200	
			LEAR	0139.0	0143.0	III		1	25	108	
			CULG	0351.0	0353.0	III	G	1	25	90	
			HIRA	0351.0	0351.5	III	B	1	25X	80	
			CULG	0558.0	0559.0	III	G	2	35	240	
			HIRA	0558.0	0559.0	III	G	2	50	250	
			LEAR	0558.0	0558.0	III		1	25U	180U	
			LEAR	0604.0	0605.0	III		1	25U	180U	
			CULG	0605.0	0605.0	III	G	1	27	180	
			HIRA	0605.5	0606.5	III	G	1	50	270	
			CULG	0619.0	0723.0	III	N ⊙	1	40	180	
	0700	1200	IZMI	0712.1	0712.4	III	G	2	85	190	
			IZMI	0722.2	0723.4	III	G	2	45	250	
			SVTO	0723.0	0745.0	III	N	1	32	180	
			CULG	0737.0	0738.0	III	G	1	18	230	
			LEAR	0737.0	0745.0	III	N	1	25	180	
			IZMI	0737.1	0737.6	III	GG,C	2	45	270X	
			IZMI	0737.5	0738.1	III	GG,C	2	40	270X	
	0719	1200	IZMI	0740.4	0745.3	III	GG,C	2	35	270X	
			CULG	0741.0	0745.0	III	G	3	25	220	
	0803	1416	POTS	0828.2	0829.7	UNCLF		1	200U	400	100-200MHz no data
			IZMI	0828.4	0829.3	III	G	1	110	215	
	0830	1352	ONDR								
	0850	1500	BLEN								
	0702	1200	IZMI	0903.9	0904.1	III	G	1	110	200	
			POTS	0916	0929	I	S,N	1	200U	380	
			POTS	0943	1034 U	I	S,N	1	200U	280	
			IZMI	0944.2	0944.3	III	B	2	110	195	
			IZMI	1011.8	1014.5	III	GG	1	45	190	
			POTS	1101.9	1102.6	III	G	1	45	75	
			POTS	1107.6	1108.0	III	G	2	200U	450	
			IZMI	1107.7	1107.9	III	G	2	110	270X	
			POTS	1108.0	1111.4	I	S,N	1	240	350	
			IZMI	1115.6	1115.9	III	G	1	120	180	
			POTS	1138	1312	I	S,N,DC	1	200U	400	
			IZMI	1138.6	1139.1	III	G	2	110	175	
			POTS	1138.6	1140.6	III	G	1	45	60	
			IZMI	1140.3	1140.4	III	G	2	110	155	
			IZMI	1145.2	1147.5	III	GG	1	110	170	
			POTS	1253.5	1305.5	III	GG	3	40X	340	
			SVTO	1254.0	1357.0	III	N	1	34	180	
			POTS	1334.7	1335.4	III	G	1	40X	55	
			POTS	1347	1416 U	I	S,N	1	200U	270	
			POTS	1355.7	1357.7	III	G	1	40X	85U	
			HOLL	1447.0	1453.0	III		1	25	180	
			SGMR	1447.0	1449.0	III		1	30	80	
			SVTO	1447.0	1452.0	III		1	33	180	
			HOLL	1608.0	1612.0	CONT		1	25	44	
			HOLL	1608.0	1617.0	III		1	25	180	
			HOLL	1930.0	1933.0	III		1	25	180	
			PALE	1930.0	1931.0	III		1	25	138	
	2000	2400	CULG	2219.0	2231.0	III	GG	1	20	130	
	2148	2400	HIRA	2221.0	2230.5	III	G	1	25X	110	
			PALE	2358.0	0005.0	III		1	25	180	
14			LEAR	0321.0	0325.0	III		1	25	180	
	0000	0800	CULG	0321.0	0324.0	III	G	2	18	160	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
14	0000	0745	HIRA	0321.5	0324.0	III	G	1	30	200	
			CULG	0554.0	0555.0	III	G	2	18	180	
			HIRA	0554.0	0555.0	III	B	1	25X	200	
			LEAR	0554.0	0554.0	III		2	25	180	
			CULG	0556.0	0556.0	III	G	1	40	90	
	0828	1354	ONDR								
	0802	1417	POTS	0858	1127	I	S,N,DC	2	200U	400	100-200MHz no data
	0850	1500	BLEN	0906.0	0950.0	I	DC	2	200	400	
	0658	1202	IZMI	0911.0	1034.0	I	S	2	180	270X	
			POTS	0940.5	0941.7	III	GG	2	200U	290	
			IZMI	0940.6	0941.5	III	G	2	180	270X	
			IZMI	1110.4	1111.2	III	G,C	2	140	270X	
			POTS	1110.4	1110.6	III	G,RS	2	200U	360	
			IZMI	1116.1	1117.8	III	GG	2	35	250	
			POTS	1116.8	1117.8	III	G	2	40X	280	
			SVTO	1117.0	1117.0	III		1	25U	81U	
			POTS	1121.4	1123.5	III	GG	2	200U	280	
			IZMI	1121.5	1121.7	III	G,U	2	140	265	
			POTS	1141.6	1143.1	III	G	2	200U	380	
			IZMI	1142.7	1143.2	III	G,U	2	120	270X	
			POTS	1202	1417 U	I	S,N	1	200U	370	
			SVTO	1203.0	1204.0	III		1	25U	82U	
			POTS	1203.3	1204.2	III	G	2	40X	360	
			POTS	1332	1342	I	S,N	1	230	330	
	2000	2400	CULG	2000.0	2001.0	III	G	1	30	90	
	2147	2400	HIRA	2229.5	2230.0	III	B	1	100	200	
			CULG	2230.0	2231.0	III	G	1	60	180	
			HIRA	2332.0	2332.5	III	B	1	50	100	
			LEAR	2332.0	2332.0	III		1	40	93	
			CULG	2333.0	2338.0	III	G	1	30	90	
15	0000	0746	HIRA								
			LEAR	0141.0	0142.0	III		1	25	96	
	0000	0800	CULG	0141.0	0143.0	III	G	1	27	130	
			CULG	0729.0	0740.0	III	G	1	25	90	
	0700	1200	IZMI	0729.2	0729.3	III	B	1	45	90	
			IZMI	0737.7	0739.5	III	G	1	45	90	
			IZMI	0808.1	0808.4	III	G	1	40	85	
	0802	1419	POTS	0813	0822 U	I	S,N	1	230	320	100-200MHz no data
	0827	1356	ONDR								
	0850	1500	BLEN								
			IZMI	0916.8	0918.3	III	G	2	35	160	
			POTS	0916.9	0920.0	III	GG	2	40X	380	
			LEAR	0917.0	0920.0	III		1	25	180	
			SVTO	0917.0	0920.0	III		1	30U	83U	
			IZMI	0918.6	0920.3	III	GG	1	45	95	
			IZMI	0931.4	0931.6	III	B	1	50	90	
			POTS	0931.5	0931.7	III	B	1	40X	80	
			POTS	1022.1	1022.9	I	DC	1	200U	240	
			IZMI	1031.5	1031.6	III	B	1	45	90	
			POTS	1126	1133	I	S,N	1	200U	240	
			POTS	1314	1407	I	S,N	1	200U	300	
	2147	2400	HIRA								
	2000	2400	CULG	2338.0	2338.0	III	B	1	30	90	
			CULG	2356.0	2356.0	III	B	1	30	90	
16	0000	0800	CULG	0047.0	0047.0	III	B	1	18	45	
	0000	0747	HIRA	0106.5	0107.0	III	B	1	130	560	
			CULG	0107.0	0110.0	III	G	1	130	240	
			CULG	0120.0	0800.0D	I	S	1	80	160	
			LEAR	0205.0	1032.0	CONT		1	75	137	
			CULG	0301.0	0302.0	III	G	1	60	160	
			CULG	0350.0	0351.0	III	G	1	30	90	
			LEAR	0404.0	0404.0	III		1	25	55	
			CULG	0405.0	0405.0	III	B	1	30	60	
			CULG	0605.0	0607.0	III	G	1	35	80	
	0658	1200	IZMI	0658.8	0705.0	I	GG,DC	2	110	140	
			CULG	0712.0	0712.0	III	B	1	25	80	
			IZMI	0712.4	0712.5	III	B	1	55	85	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
16	0826	1358	ONDR								
	0850	1500	BLEN								
	0802	1420	POTS	0902.9	0904.0	DCIM		1	330	410	100-200MHz no data
			POTS	1007	1020	I	S,N	1	230	390	
			POTS	1035.1	1035.4	I	DC	1	200U	230	
			IZMI	1110.5	1110.7	III	B	1	55	85	
			POTS	1110.6	1110.8	III	B	1	40X	60	
	2146	2400	HIRA								
	2000	2400	CULG	2328.0	2338.0	III	G	1	30	90	
17	0000	0800	CULG	0051.0	0051.0	III	B	1	35	90	
			CULG	0137.0	0137.0	III	B	1	40	160	
			CULG	0452.0	0452.0	III	B	1	30	100	
			LEAR	0452.0	0452.0	III		1	25	86	
	0000	0748	HIRA	0452.0	0452.5	III	B	1	30	120	
			LEAR	0558.0	0559.0	III		1	25	180	
			HIRA	0558.5	0559.5	III	G	1	30	190	
			CULG	0559.0	0559.0	III	G	3	23	170	
			CULG	0601.0	0601.0	III	B	1	30	75	
			HIRA	0601.5	0602.0	III	B	1	40	100	
			CULG	0624.0	0624.0	III	B	1	30	80	
			LEAR	0631.0	0634.0	III		1	25	180	
			HIRA	0631.5	0634.0	III	G	1	30	180	
			CULG	0632.0	0634.0	III	G	3	23	120	
			SVTO	0633.0	0634.0	III		1	25U	62U	
			CULG	0658.0	0700.0	III	G	1	23	75	
			CULG	0702.0	0703.0	III	G	1	27	150	
			HIRA	0707.0	0707.5	III	B	1	40	140	
			LEAR	0707.0	0710.0	III		1	25	134	
	0700	1200	IZMI	0707.1	0708.0	III	G	1	45	170	
			IZMI	0710.4	0710.8	III	G	1	45	125	
			HIRA	0710.5	0711.0	III	B	1	40	110	
			CULG	0711.0	0711.0	III	B	2	23	150	
			CULG	0718.0	0718.0	III	B	1	30	80	
			CULG	0733.0	0735.0	III	G	3	20	180	
			LEAR	0733.0	0734.0	III		1	25	180	
			SVTO	0733.0	0734.0	III		1	25	180	
			IZMI	0733.4	0734.2	III	GG,C	2	40	190	
			HIRA	0733.5	0734.5	III	G	1	50	180	
			CULG	0742.0	0742.0	III	B	1	27	45	
			CULG	0745.0	0746.0	III	G	3	20	180	
			LEAR	0745.0	0746.0	III		1	25	180	
			SVTO	0745.0	0745.0	V		1	25	180	
			IZMI	0745.2	0745.8	III	G,C	2	35	190	
	0756	1422	POTS	0813	0825	I	S,N	1	200U	370	100-200MHz no data
			IZMI	0821.3	0821.5	III	G	1	45	120	
			IZMI	0823.2	0823.8	III	G	1	170	270	
			POTS	0823.2	0824.3	III	GG,RS	2	200U	290	
	0825	1400	ONDR								
	0850	1500	BLEN								
			IZMI	0911.8	0912.4	III	G	1	45	140	
			POTS	1207.7	1208.1	III	G	1	200U	410	
	2000	2400	CULG	2145.0	2153.0	III	G	1	20	170	
	2146	2400	HIRA								
			HOLL	2150.0	2150.0	III		1	25	81	
			CULG	2220.0	2226.0	III	G	1	18	130	
18	0000	0749	HIRA								
	0000	0800	CULG	0132.0	0132.0	III	B	1	30	90	
			CULG	0138.0	0138.0	III	B	1	27	75	
			CULG	0441.0	0441.0	III	B	1	30	80	
			LEAR	0441.0	0603.0	III	N	1	25	107	
			CULG	0450.0	0454.0	III	G	1	25	90	
	0756	1423	POTS	0822	0923	I	S,N	1	200U	300	100-200MHz no data
	0823	1402	ONDR								
	0850	1500	BLEN								
			POTS	0854.0	0855.8	DCIM		2	210	450	
			POTS	0904	0907	DCIM		1	290	420	
			POTS	0913.6	0917.6	DCIM		2	200U	420	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
18			POTS	0958.8	0959.0	III	B	1	200U	290	
	0700	1200	IZMI	0958.8	0958.9	III	B	1	45	95	
			POTS	1002.2	1002.4	DCIM		1	220	340	
			POTS	1016	1023	I	S	1	220	270	
			POTS	1042	1317	I	S,N	1	210	400	
			POTS	1344.7	1345.2	DCIM		2	270	370	
			POTS	1406	1423 U	I	S,N	1	200U	310	
			HOLL	2136.0	2137.0	III		1	25	180	
	2000	2400	CULG	2137.0	2138.0	III	G	1	27	140	
	2146	2400	HIRA								
			CULG	2225.0	2231.0	III	G	1	57U	140	
			LEAR	2251.0	2251.0	III		1	25	98	
19	0000	0800	CULG	0000.0	0000.0	III	B	1	25	130	
			CULG	0347.0	0348.0	III	G	1	60	150	
	0000	0750	HIRA	0347.5	0348.0	III	G	1	80	120	
			HIRA	0414.5	0416.0	III	G	1	90	330	
			CULG	0415.0	0416.0	III	G	1	70	360	
			LEAR	0415.0	0415.0	III		1	94	180	
			LEAR	0425.0	0425.0	III		3	25	180	
			HIRA	0425.5	0426.0	III	B	1	25X	140	
			CULG	0426.0	0426.0	III	B	3	18	140	
			CULG	0514.0	0602.0	III	N	1	23	160	
			LEAR	0514.0	0514.0	III		1	25	92	
			HIRA	0514.5	0515.0	III	B	1	25X	110	
			LEAR	0655.0	0656.0	III		1	25	121	
			HIRA	0655.5	0656.0	III	B	1	50	110	
			CULG	0656.0	0656.0	III	B	1	45	110	
			SVTO	0701.0	0701.0	III		1	29U	180U	
			LEAR	0708.0	0709.0	III		1	25	76	
			HIRA	0708.5	0709.0	III	B	1	40	80	
	0700	1200	IZMI	0708.9	0709.1	III	B	1	45	95	
			CULG	0709.0	0709.0	III	B	1	23	75	
	0822	1404	ONDR								
			IZMI	0927.7	0928.2	III	G	1	45	95	
			IZMI	0957.2	0957.2	III	B	1	45	85	
	0754	1425	POTS	1100	1139	I	S,N	1	220	340	100-200MHz no data
			IZMI	1136.9	1138.2	III	GG,C	2	40	260	
			SVTO	1137.0	1137.0	III		1	28U	180U	
			POTS	1137.3	1138.2	III	G	2	40X	260	
			POTS	1231	1358	I	S,N,DC	2	200U	400	
			SVTO	1251.0	1253.0	III		1	29U	180U	
			POTS	1252.3	1253.1	III	G,RS	2	40X	270	
	0850	1500	BLEN	1412.3	1417.5	III	GG,RS,S	3	200	1200	
			POTS	1412.9	1416.4	DCIM		2	200U	510	
			HOLL	1447.0	1448.0	III		1	25	180	
			SVTO	1447.0	1448.0	III		1	25	180	
			BLEN	1447.2	1448.3	III	GG	2	140	300	
			HOLL	1621.0	1622.0	III		1	87	180	
	2000	2400	CULG	2119.0	2119.0	III	B	1	20	140	
	2145	2400	HIRA								
			CULG	2158.0	2158.0	III	B	1	30	90	
20	0000	0751	HIRA	0149.0	0150.5	III	G	1	50	180	
	0000	0800	CULG	0149.0	0150.0	III	G	1	20	160	
			HIRA	0308.5	0309.0	III	B	1	40	110	
			CULG	0309.0	0309.0	III	B	1	30	100	
	0700	1200	IZMI	0706.9	0714.7	III	GG	2	30	270X	
			CULG	0708.0	0714.0	III	GG	3	23	230	
			HIRA	0708.0	0714.5	III	G	2	40	220	
			LEAR	0708.0	0714.0	III	N	1	25	180	
			SVTO	0708.0	0714.0	III		1	25	180	
			CULG	0717.0	0724.0	III	G	1	25	85	
			IZMI	0718.2	0722.3	III	G	1	45	95	
	0753	1426	POTS	0816.0	0816.5	DCIM		1	330	430	100-200MHz no data
	0820	1406	ONDR								
			SVTO	0941.0	0941.0	III		1	25U	152U	
			IZMI	1020.7	1021.4	III	G	1	110	210	
			POTS	1021.7	1022.6	I	S	1	200U	330	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
20			POTS	1109	1128	I	S,N	1	260	330	
			POTS	1123.9	1124.3	III	G	1	200U	370	
			POTS	1238	1426 U	I	S,N	1	200U	300	
			POTS	1255.7	1255.9	III	G	1	200U	330	
			POTS	1411.4	1411.6	III	B	1	40X	65	
			POTS	1418.0	1418.3	III	G	1	45	80	
	0840	1510	BLEN	1448.0	1502.5	III	GG,S	2	140	400	
			SVTO	1457.0	1459.0	III		1	25U	144U	
			HOLL	1458.0	1500.0	III		1	25	157	
			HOLL	1919.0	1921.0	III		1	25	131	
			PALE	1920.0	1921.0	III		1	25	110	
			SGMR	1920.0	1920.0	III		1	30	55	
	2055	2400	CULG	2120.0	2121.0	III	G	1	57U	140	
			HOLL	2130.0	2131.0	III		1	25	180	
			CULG	2131.0	2132.0	III	G	3	18	160	
			PALE	2131.0	2131.0	III		1	25	58	
			CULG	2322.0	2338.0	III	GG	1	25	180	
			LEAR	2322.0	2338.0	III	N	1	25	180	
			CULG	2323.0	2325.0	III	G	3	20	400	
			HOLL	2323.0	2326.0	III		1	25	180	
	2145	2400	HIRA	2323.0	2327.5	III	G	2	25X	460	
			CULG	2355.0	2355.0	III	B	1	20	90	
21			LEAR	0224.0	0244.0	III	N	1	25	180	
			PALE	0224.0	0226.0	III	N	2	29	162	
	0000	0752	HIRA	0224.5	0229.0	III	G	3	30	330	
	0000	0800	CULG	0225.0	0229.0	III	G	3	18X	480	
			CULG	0228.0	0234.0	II	FN	1	40	75	FLA
			CULG	0229.0	0234.0	II	SH	1	60	130	ESS 700
			CULG	0229.0	0246.0	III	N	1	20	160	
			LEAR	0229.0	0235.0	II		1	39	121	ESS 0514
			HIRA	0229.5	0234.0	II		1	60	110	
			CULG	0323.0	0356.0	III	N	1	23	90	
			CULG	0425.0	0426.0	III	G	2	25	90	
			HIRA	0425.0	0425.5	III	B	1	50	80	
			LEAR	0425.0	0439.0	III	N	1	25	180	
			CULG	0431.0	0440.0	III	GG	1	23	170	
			HIRA	0432.0	0439.5	III	G	1	40	230	
			CULG	0552.0	0555.0	III	G	3	18X	750	
			HIRA	0552.0	0554.5	III	G	2	40	460	
			LEAR	0552.0	0554.0	III		3	25	180	
			LEAR	0557.0	0601.0	II		2	52U	148U	ESS 0542
			HIRA	0557.5	0602.0	II		1	80	120	
			CULG	0558.0	0604.0	II	FN	1	40	70	FLA
			CULG	0558.0	0604.0	II	SH	1	60	140	ESS 700
			CULG	0747.0	0747.0	III	B	1	27	70	
	0818	1408	ONDR								
	0657	1200	IZMI	0849.2	0849.3	III	B	1	40	95	
			LEAR	0850.0	0854.0	III		1	25	180	
			SVTO	0850.0	0854.0	III		1	28U	152U	
			IZMI	0851.0	0851.7	III	G	2	45	270X	
	0750	1428	POTS	0851.0	0854.7	III	G	2	40X	470	100-200MHz no data
			IZMI	0853.5	0854.5	III	G,C	2	25X	240	
			POTS	1015.5	1016.5	III	G	2	40X	480	
			IZMI	1015.6	1016.3	III	G	2	40	270X	
			SVTO	1057.0	1058.0	III		1	50	126	
			POTS	1057.9	1058.1	III	B	2	40X	80	
			POTS	1057.9	1058.4	DCIM		2	210	370	
			IZMI	1058.0	1058.2	III	G,C	2	25X	95	
			POTS	1058.0	1058.3	V	B	2	40X	60	
			POTS	1121.3	1121.5	III	B	1	40X	60	
			POTS	1145.0	1151.2	III	G,RS	2	40X	450	
			IZMI	1146.0	1146.2	III	G	2	55	270X	
			POTS	1206.0	1210.0	III	G	2	40X	340	
			SVTO	1208.0	1208.0	III		1	29	76	
			POTS	1231.9	1238.6	III	G,N	1	40X	330	
			POTS	1248	1309	III	GG,N	3	40X	340	
			SVTO	1249.0	1326.0	III	N	2	25	180	
	0840	1510	BLEN	1304.7	1307.7	III	G	2	100X	400	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
21			POTS	1323.5	1323.8	III	G	1	40X	60	
			POTS	1333.3	1335.4	III	G	1	200U	280	
			POTS	1347.3	1349.0	III	G	1	40X	65	
			SVTO	1415.0	1417.0	III		1	42	161	
			POTS	1415.9	1417.4	III	G	2	40X	270	
			HOLL	1611.0	1614.0	III		1	25	141	
			HOLL	1824.0	1830.0	III		1	25	133	
	2000	2400	CULG	2132.0	2134.0	III	G	2	20	120	
			HOLL	2133.0	2144.0	III	N	1	25	180	
			PALE	2133.0	2144.0	III	N	1	25	177	
			CULG	2138.0	2141.0	III	G	3	18	400	
			CULG	2144.0	2144.0	III	B	2	20	90	
			CULG	2150.0	2153.0	III	G	1	57U	110	
			CULG	2252.0	2257.0	III	G	2	23	90	
			HOLL	2252.0	2306.0	III	N	1	25	139	
			LEAR	2252.0	2306.0	III	N	2	25	180	
			PALE	2256.0	2306.0	III	N	1	25	51	
	2145	2400	HIRA	2257.0	2258.0	III	B	1	30	70	
			CULG	2303.0	2303.0	III	B	1	27	40	
			CULG	2304.0	2306.0	III	G	3	18X	160	
			HIRA	2304.5	2306.5	III	G	2	25X	240	
22			LEAR	0054.0	0102.0	III		1	25	101	
	0000	0800	CULG	0055.0	0059.0	III	G	1	25	75	
			CULG	0118.0	0119.0	III	G	2	18	70	
			CULG	0259.0	0311.0	III	G	3	18X	180	
			LEAR	0259.0	0313.0	III	N	1	25	180	
	0000	0753	HIRA	0259.5	0300.0	III	G	1	25X	200	
			CULG	0312.0	0313.0	III	G	1	23	180	
			HIRA	0312.5	0313.0	III	B	1	50	200	
			CULG	0325.0	0325.0	III	B	2	23	100	
			HIRA	0325.0	0325.5	III	B	1	30	100	
			CULG	0356.0	0357.0	III	B	3	23	120	
			HIRA	0356.0	0357.0	III	B	1	25X	110	
			LEAR	0356.0	0357.0	III		1	25	180	
			LEAR	0415.0	0634.0	III	N	1	25	180	
			HIRA	0417.5	0418.0	III	B	1	30	250	
			CULG	0418.0	0418.0	III	B	1	27	160	
			CULG	0436.0	0449.0	III	GG	3	18	280	
			HIRA	0436.0	0450.5	III	G	2	25X	240	
			HIRA	0507.5	0508.0	III	B	1	25X	210	
			CULG	0508.0	0508.0	III	B	1	27	150	
			CULG	0530.0	0540.0	III	G	1	30	160	
			HIRA	0530.0	0540.0	III	G	1	25X	230	
	0700	1014	IZMI	0703.5	0704.6	III	G	1	45	85	
			LEAR	0714.0	0714.0	III		1	25	148	
			SVTO	0714.0	0714.0	III		1	25U	84U	
			HIRA	0714.5	0715.0	III	B	1	30	200	
			IZMI	0714.5	0715.2	III	G	2	25X	180	
			CULG	0715.0	0715.0	III	B	1	18	170	
			IZMI	0746.6	0746.8	III	B	1	45	90	
			CULG	0747.0	0800.0D	III	N	1	25	90	
			CULG	0750.0	0750.0	III	G	3	23	500	
			IZMI	0750.0	0751.9	III	GG,C	2	30	270X	
			LEAR	0750.0	0750.0	III		1	25	180	
			SVTO	0750.0	0750.0	III		1	25	180	
	0747	1430	POTS	0750.0	0751.2	III	GG	2	40X	480	100-200MHz no data
			POTS	0756.3	0756.7	DCIM		1	350	480	
			IZMI	0815.5	0815.6	III	B	1	45	65	
	0817	1410	ONDR								
	0840	1510	BLEN								
			IZMI	0854.5	0854.6	III	G	1	45	85	
			HOLL	1748.0	1748.0	III		1	25	149	
			HOLL	1814.0	1815.0	III		1	25	135	
	2000	2400	CULG	2004.0	2004.0	III	B	1	20	57	
			CULG	2053.0	2056.0	III	G	1	27	70	
			CULG	2154.0	2155.0	III	G	1	27	180	
			CULG	2223.0	2226.0	III	G	1	18	140	
	2144	2400	HIRA	2224.5	2225.0	III	B	1	30	180	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
22			CULG	2241.0	2244.0	III	G	1	18	50	
			CULG	2309.0	2310.0	III	G	1	200	950	
			HIRA	2309.5	2310.0	III	B	1	130	250	
			LEAR	2315.0	2316.0	III		1	25	180	
			HIRA	2315.5	2316.5	III	G	1	40	270	
			CULG	2316.0	2317.0	III	G	1	25	170	
			CULG	2343.0	2346.0	III	G	1	27	140	
23	0000	0800	CULG	0054.0	0100.0	III	G	1	27	130	
			LEAR	0216.0	0224.0	III		1	25	180	
	0000	0754	HIRA	0216.5	0225.0	III	G	1	25X	210	
			CULG	0217.0	0219.0	III	G	2	18X	1000	
			CULG	0222.0	0225.0	III	G	1	23	180	
			CULG	0427.0	0432.0	III	G	1	23	700	
			HIRA	0427.0	0431.5	III	G	1	25X	1000	
			LEAR	0427.0	0457.0	III	N	2	25	180	
			CULG	0431.0	0431.0	III	B	3	18	140	
			HIRA	0432.0	0444.0	II		1	30	80	
			HIRA	0432.0	0444.0	II		3	60	140	
			LEAR	0432.0	0444.0	II		3	31	170	ESS 0476
			CULG	0433.0	0444.0	II	FN	2	30	85	
			CULG	0433.0	0445.0	II	SH	3	57	160	ESS 450
			CULG	0443.0	0448.0	III	G	3	18X	850	
			HIRA	0443.5	0447.0	III	G	1	25X	600	
			CULG	0447.0	0503.0	II	SH	3	35	140	ESS 450
			HIRA	0447.0	0501.0	II		3	40	130	
			LEAR	0447.0	0502.0	II		3	25	146	ESS 0413
			CULG	0448.0	0500.0	II	FN	2	20	65	
			CULG	0455.0	0457.0	III	G	1	18	160	
			LEAR	0705.0	0706.0	III		1	25	180	
	0700	1200	IZMI	0705.6	0706.6	III	GG,C	2	40	270X	
			CULG	0706.0	0708.0	III	G	2	18	300	
			HIRA	0706.0	0706.5	III	B	1	30	320	
			IZMI	0707.9	0708.3U	III	G	1	45	90	
	0745	1433	POTS	0801.4	0801.8	DCIM		1	350	420	100-200MHz no data
			POTS	0804.6	0810.3	III	GG	2	200U	430	
			IZMI	0805.8	0809.1	III	GG	1	130	270X	
			POTS	0826.5	0828.8	DCIM		2	250	460	
			POTS	0904.7	0905.5	III	G	1	200	300	
			LEAR	1012.0	1013.0	III		1	74	172	
			IZMI	1043.0	1043.7	III	G,U	2	110	170	
			IZMI	1044.2	1044.3	III	B	1	45	80	
			POTS	1044.3	1044.5	III	B	1	40X	80	
			POTS	1124.4	1129.0	III	GG	2	40X	280	
			IZMI	1124.5	1126.0	III	GG	1	55	210	
			SVTO	1127.0	1128.0	III		1	25	180	
			IZMI	1127.8	1128.9	III	GG	2	25X	270X	
			POTS	1145.0	1148.0	III	GG	1	200U	320	
			ONDR	1223.3	1223.4	DCIM	G	2	964	1311	
			ONDR	1233.2	1251.3	DCIM	G	1	800X	2000X	
			SVTO	1236.0	1237.0	III		2	25	180	
	0815	1413	ONDR	1236.1	1241.4	DCIM	GG	2	2000X	4500X	
	0830	1515	BLEN	1236.4	1248.5	II	H	3	100X	4000X	
			POTS	1236.6	1237.4	III	G	3	40X	660	
			POTS	1236.9	1240.7	DCIM		2	330	500	
			POTS	1237.5	1250	IV		2	40X	430	
			SVTO	1239.0	1253.0	II		2	41	180	ESS 0578
			POTS	1239.2	1256.2	II	F,H	3	40X	380	
			POTS	1321 U	1433 U	I	S,N	1	200U	270	
	2000	2400	CULG	2042.0	2042.0	III	B	1	25	45	
			LEAR	2344.0	2344.0	III		1	25	180	
	2144	2400	HIRA	2344.5	2345.0	III	B	1	30	230	
24			LEAR	0126.0	0127.0	III		1	25	180	
	0000	0433	HIRA	0126.5	0127.0	III	B	1	40	110	
	0000	0800	CULG	0317.0	0336.0	IV		3	200U	1000	
			HIRA	0317.5	0328.0	II		3	40	130	
			HIRA	0318.0	0337.0	IV		3	100	700	
			HIRA	0318.5	0328.0	II		3	80	250	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
24			CULG	0319.0	0334.0	II	SH	2	50	260	SWF ESS 600
			LEAR	0319.0	0329.0	II		1	86	180	ESS 0556
			PALE	0319.0	0331.0	II		2	50	180	ESS 0658
			CULG	0320.0	0330.0	II	FN	3	35	120	
			CULG	0321.0	0324.0	III	G	2	18	1300	
			CULG	0337.0	0337.0	III	B	1	35	70	
	0500	0755	HIRA								
	0814	1415	ONDR								
	0702	1200	IZMI	0814.6	0814.8	III	B	1	45	85	
			IZMI	0826.0	0826.2	II	G	1	45	95	
	0830	1515	BLEN								
			IZMI	0836.3	0905.5	III	N	1	40	95	
			IZMI	0842.5	0845.6	III	GG	2	45	95	
			IZMI	0903.5	0903.8	III	G	1	45	65	
			IZMI	0919.0	0919.2	III	G	1	45	160	
	0743	1437	POTS	0944	0955	I	S,N,DC	1	200U	390	100-200MHz no data
			IZMI	0945.1	0945.1	III	B	1	90	145	
			IZMI	0946.9	0947.0	III	B	2	90	190	
			LEAR	0954.0	0955.0	III		1	25	180	
			SVTO	0954.0	0955.0	III		1	29U	82U	
			POTS	0954.6	0955.1	III	G	2	40X	350	
			IZMI	0954.7	0955.2	III	G,C	1	25X	250	
			IZMI	1015.5	1016.0	III	G	1	60	150	
			IZMI	1020.7	1020.9	III	B	1	45	120	
			POTS	1020.8	1021.1	III	B	1	40X	230	
			POTS	1209	1212	UNCLF		1	200U	270	
			POTS	1217.1	1217.3	UNCLF		1	45	60	
			POTS	1325.9	1328.1	III	G,N	1	40X	280	
			HOLL	1847.0	1853.0	III		1	25U	138U	
			HOLL	2003.0	2009.0	III		1	25	180	
	2000	2400	CULG	2003.0	2004.0	III	G	1	20	150	
			CULG	2008.0	2011.0	III	G	1	20	180	
			CULG	2051.0	2051.0	III	G	2	18	150	
			CULG	2207.0	2214.0	III	GG	1	23	180	
			LEAR	2238.0	1054.0	III	N	1	25	180	
			CULG	2249.0	2249.0	III	B	1	25	130	
			CULG	2300.0	2302.0	III	G	2	18	180	
			HOLL	2300.0	2301.0	III		1	25	180	
	2143	2400	HIRA	2300.5	2302.0	III	G	1	25X	300	
25	0000	0800	CULG	0015.0	0017.0	III	G	1	23	150	
			CULG	0027.0	0028.0	III	G	1	18	150	
			CULG	0043.0	0043.0	III	B	1	27	90	
			CULG	0109.0	0201.0	III	N	1	20	180	
	0000	0756	HIRA	0116.5	0118.0	III	G	1	40	230	
			CULG	0238.0	0238.0	III	B	1	20	130	
			CULG	0338.0	0346.0	III	GG	1	23	150	
			HIRA	0342.0	0345.0	III	G	1	30	130	
			CULG	0433.0	0508.0	III	N	1	20	180	
			CULG	0609.0	0609.0	III	B	2	18	90	
			CULG	0636.0	0636.0	III	B	1	20	90	
			CULG	0658.0	0700.0	III	G	1	23	140	
	0719	1200	IZMI	0732.6	0732.7	III	B	2	40	180	
			CULG	0733.0	0733.0	III	B	2	27	180	
	0740	1441	POTS	0740 E	0944	I	S,N	2	200U	380	100-200MHz no data
			IZMI	0746.7	0748.7	III	G	1	45	95	
			CULG	0747.0	0749.0	III	B	1	27	90	
			IZMI	0806.0	0816.0U	I	N	1	200	270X	
	0812	1417	ONDR								
			IZMI	0823.0	0827.4	III	GG	2	40	250	
			IZMI	0839.8	0840.0	III	B	1	45	90	
			IZMI	0908.2	0910.4	III	GG	2	45	215	
			POTS	0908.6	0910.1	III	G	1	40X	350	
			IZMI	0923.2	0923.6	III	GG	2	45	190	
			POTS	0923.2	0923.6	III	G	1	40X	370	
			IZMI	0948.4	1000.4	III	G	1	40	180	
			SVTO	1010.0	1010.0	III		1	30U	83U	
			IZMI	1010.7	1010.9	III	G	2	35	130	
			POTS	1010.7	1011.0	III	G	2	40X	85U	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
25			POTS	1123.7	1128.5	III	GG	2	40X	300	
			IZMI	1124.1	1127.9	III	GG	2	25X	220	
	0820	1520	BLEN	1124.7	1125.5	III	G,RS	2	100X	500	
			POTS	1236.7	1304.3	III	GG,N	2	40X	400	
			POTS	1323.8	1332.8	III	GG,N	3	40X	470	
			SGMR	1325.0	1325.0	III		1	30	55	
			SVTO	1325.0	1328.0	III		2	25	153	
			BLEN	1325.6	1331.3	III	GG,S	2	100X	2800	
			POTS	1341	1441 U	I	S,N,DC	2	250	390	
			POTS	1427.3	1435.3	III	G,N	2	40X	85U	
			PALE	1850.0	1851.0	III		1	25	180	
			HOLL	1851.0	1851.0	III		1	25	153	
	2000	2400	CULG	2005.0	2130.0	III	N	1	18	180	
			HOLL	2056.0	2210.0	III	N	1	25	165	
			PALE	2059.0	2104.0	III		1	25	180	
			CULG	2100.0	2100.0	III	B	2	18	180	
			PALE	2122.0	0207.0	III	N	1	25	180	
			CULG	2123.0	2125.0	III	G	2	18	130	
			CULG	2131.0	2131.0	III	B	2	18	90	
	2142	2400	HIRA	2156.0	2203.0	III	G	1	40	180	
			CULG	2157.0	2203.0	III	G	3	18	90	
			CULG	2210.0	2210.0	III	B	3	18	90	
			HIRA	2210.0	2210.5	III	B	2	30	150	
			LEAR	2210.0	2210.0	III		1	25	180	
			LEAR	2251.0	2252.0	III		1	25	128	
			CULG	2252.0	2259.0	III	G	2	18	60U	
			HIRA	2252.0	2259.5	III	G	1	25X	110	
			LEAR	2254.0	2304.0	III		1	25	140	
			HIRA	2303.5	2304.5	III	G	1	70	130	
			LEAR	2336.0	2340.0	III		1	26	87	
			HIRA	2337.0	2337.5	III	B	1	30	90	
			LEAR	2358.0	0001.0	III		1	25	101	
			HIRA	2359.0	2401.0	III	G	1	25X	100	
26			LEAR	0008.0	0010.0	III		1	25	83	
	0000	0758	HIRA	0010.0	0010.5	III	B	1	25X	80	
			LEAR	0033.0	0037.0	III		2	25	154	
			HIRA	0033.5	0038.0	III	G	1	25X	170	
			LEAR	0044.0	0102.0	III	N	1	25	93	
	0000	0800	CULG	0412.0	0432.0	III	N	1	23	60U	
	0704	1200	IZMI	0704.6	0704.7	III	B	1	45	90	
			SVTO	0802.0	0802.0	III		1	25	180	
			LEAR	0815.0	0815.0	III		1	41	85	
			SVTO	0815.0	0815.0	III		1	25U	74U	
			IZMI	0815.1	0815.8	III	G,FS	1	40	140	
			IZMI	0931.8	0932.0	III	B	1	45	85	
			IZMI	1020.2	1023.4	III	GG	1	40	95	
	0736	1444	POTS	1020.2	1022.6	III	G,N	1	40X	80	100-200MHz no data
			POTS	1022	1112 U	I	S,N	1	200U	300	
			ONDR	1023.1	1044.3	DCIM	GG	1	800X	2000X	
	0810	1419	ONDR	1023.2	1045.2	DCIM	GG	1	2000X	4500X	
	0820	1520	BLEN	1023.8	1046.5	DCIM	P,S,C	3	100X	4000X	
			IZMI	1025.9	1028.9	III	GG,FS	1	40	175	
			SVTO	1030.0	1039.0	III		1	25	180	
			IZMI	1030.3	1039.2	III	S,FS	2	25X	240	
			IZMI	1039.4	1052.0	III	N	1	40	270X	
			IZMI	1053.6	1053.7	III	B	2	35	210	
			POTS	1118.6	1118.9	III	G	2	200U	340	
			POTS	1146	1204	I	S,N	1	240	330	
			POTS	1232	1252	I	S,N	1	270	340	
			POTS	1232.8	1233.1	III	G	1	200U	280	
			BLEN	1321.5	1325.7	III	GG,RS	1	1600	4000X	
			POTS	1342.1	1350.6	III	G,N	1	200U	350	
			POTS	1346	1444 U	I	S,N	1	210	330	
			HOLL	1529.0	1537.0	III		1	25	160	
			HOLL	1939.0	1939.0	III		1	25	87	
	2000	2400	CULG	2022.0	2023.0	III	G	1	23	45	
			CULG	2032.0	2053.0	III	N	1	27	120	
	2142	2400	HIRA								

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
26			CULG	2220.0	2220.0	III	G	1	23	50	
27			LEAR	0209.0	0210.0	III		1	25	180	
	0000	0758	HIRA	0209.5	0210.5	III	G	1	25X	280	
	0000	0800	CULG	0210.0	0210.0	III	G	2	18	70	
			CULG	0339.0	0340.0	III	G	3	18	80	
			HIRA	0339.0	0339.5	III	B	1	25X	260	
			LEAR	0339.0	0339.0	III		1	25	180	
			CULG	0449.0	0500.0	III	G	1	18	60	
			LEAR	0751.0	0806.0	III	N	1	25	180	
			SVTO	0751.0	0840.0	III	N	1	28U	75U	
	0700	1200	IZMI	0751.4	0751.6	III	B	1	40	145	
			CULG	0752.0	0752.0	III	B	2	18	60U	
			CULG	0755.0	0755.0	III	B	1	18	50	
	0732	1448	POTS	0800.5	0807.9	III	GG	2	40X	300	100-200MHz no data
			IZMI	0800.7	0805.9	III	GG	2	25X	270X	
	0809	1421	ONDR								
			IZMI	1004.8	1004.9	III	B	1	45	90	
			SVTO	1015.0	1015.0	III		1	28U	41U	
			IZMI	1016.9	1017.0	III	B	2	55	265	
			POTS	1119.5	1119.8	III	G	1	40X	80	
			POTS	1146.3	1204.2	III	GG,N	2	200U	340	
			IZMI	1146.4	1147.5	III	GG	2	115	270X	
			HOLL	1719.0	1720.0	III		1	25	43	
	2000	2400	CULG	2129.0	2129.0	III	B	1	50	70	
			CULG	2148.0	2201.0	II	UE	1	27	57U	ESS 300
			HOLL	2151.0	2159.0	III		1	25	49	
			PALE	2154.0	2200.0	III		1	25	48	
			HOLL	2210.0	2213.0	III		1	25	51	
			CULG	2211.0	2213.0	UNCLF		1	27	50	
	2141	2400	HIRA	2211.0	2213.0	II		1	30	50	
			CULG	2242.0	2242.0	III	G	1	30	50	
28			LEAR	0120.0	0121.0	III		1	25	172	
	0000	0759	HIRA	0120.5	0121.5	III	B	1	40	160	
	0000	0800	CULG	0121.0	0121.0	III	B	1	25	60	
			HIRA	0248.0	0251.0	III	G	1	40	110	
			LEAR	0248.0	0250.0	III		1	28	101	
			CULG	0500.0	0521.0	III	N	1	25	75U	
			CULG	0614.0	0614.0	III	B	1	23	60U	
			HIRA	0651.5	0652.0	III	B	1	30	200	
			CULG	0652.0	0652.0	III	G	1	27	80U	
	0658	1200	IZMI	0705.6	0706.5	III	G,FS	1	55	145	
			IZMI	0708.8	0709.6	III	G	1	45	90	
			CULG	0709.0	0710.0	III	G	1	20	50	
	0807	1423	ONDR								
	0728	1452	POTS	0814	0830	III	GG,N	2	40X	290	100-200MHz no data
			SVTO	0814.0	0819.0	III		1	25	180	
			IZMI	0814.6	0815.5	III	G	1	40	190	
			IZMI	0817.8	0819.4	III	GG	2	25	165	
			SVTO	0822.0	0826.0	III		2	25	180	
			IZMI	0822.1	0827.0	III	GG	2	35	190	
			IZMI	0824.1	0824.6	III	G	2	25X	215	
			IZMI	0829.2	0830.4	III	G	1	45	165	
			IZMI	0833.2	0833.7	III	G	1	45	90	
			IZMI	1011.3	1012.1	III	G	1	140	215	
			POTS	1137.2	1138.2	UNCLF		2	200U	260	
			POTS	1314.9	1316.2	III	G	3	40X	260	
			SGMR	1315.0	1316.0	III		1	30	45	
			SVTO	1315.0	1316.0	III		2	25U	83U	
			SGMR	1535.0	1536.0	III		2	30	50	
	2000	2400	CULG	2029.0	2029.0	III	B	1	27	75	
			CULG	2042.0	2043.0	III	G	2	18	180	
			HOLL	2042.0	2042.0	III		1	25	151	
			HOLL	2136.0	2139.0	III		2	25	180	
			PALE	2136.0	2140.0	III		1	25	180	
			CULG	2137.0	2140.0	III	G	3	18X	190	
			HOLL	2150.0	2154.0	III		1	25	180	
			CULG	2151.0	2155.0	III	G	1	20	140	

S O L A R R A D I O E M I S S I O N
Spectral Observations

JANUARY 2003

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
28	2140	2400	HIRA	2151.0	2154.5	III	G	1	25X	170	
			CULG	2237.0	2239.0	III	G	3	18	180	
			HIRA	2237.0	2238.5	III	G	1	25X	300	
			HOLL	2237.0	2238.0	III		1	25	146	
			LEAR	2237.0	2238.0	III		1	25	180	
			PALE	2237.0	2238.0	III		1	25	75	
29			LEAR	0218.0	1053.0	III	N	1	25	180	
	0000	0800	CULG	0218.0	0218.0	III	B	1	25	150	
	0000	0800	HIRA	0218.0	0218.5	III	B	1	30	200	
			CULG	0234.0	0237.0	III	G	1	25	140	
			HIRA	0234.0	0237.0	III	G	1	25X	190	
	0805	1426	ONDR								
	0700	1200	IZMI	0828.4	0828.5	III	G	1	45	160	
	0724	1456	POTS	0952.8	0957.3	III	GG	2	40X	350	100-200MHz no data
			LEAR	0953.0	0955.0	III		1	25	180	
			SVTO	0953.0	0955.0	III		1	25	168	
			IZMI	0953.1	0955.7	III	GG	2	25X	270X	
			IZMI	0954.6	0955.3	V	G	2	40	65	
			POTS	1123.8	1124.0	III	B	1	40X	85	
			POTS	1130	1139	I	S,N	1	200U	260	
			POTS	1334	1456 U	I	S,N	1	210	320	
			POTS	1338.5	1339.7	UNCLF		1	200U	350	
	2000	2400	CULG								
	2140	2400	HIRA								
30	0000	0801	HIRA								
	0000	0800	CULG	0602.0	0602.0	III	B	1	30	60	
	0803	1428	ONDR								
	0720	1500	POTS	1038.4	1038.9	DCIM		2	230	420	100-200MHz no data
	1045	1530	BLEN								
			POTS	1348.9	1349.2	DCIM		1	220	360	
	2000	2400	CULG	2108.0	2108.0	III	B	1	25	80	
	2139	2400	HIRA								
31	0000	0802	HIRA								
	0000	0800	CULG	0317.0	0319.0	III	G	1	23	140	
			CULG	0709.0	0710.0	III	G	1	20	40	
	0801	1430	ONDR								
	0820	1530	BLEN								
	0700	1200	IZMI	0920.7	0920.8	III	B	1	40	60	
			IZMI	1011.0	1011.8	III	G	1	40	95	
	0716	1504	POTS	1011.3	1011.7	III	B	1	40X	65	100-200MHz no data
			HOLL	1849.0	1849.0	III		1	25	86	
	2000	2400	CULG	2208.0	2227.0	II	SH	3	35	110	ESS 550
			CULG	2209.0	2217.0	II	FN	1	25U	50	
			HOLL	2209.0	2219.0	II		1	30	86	ESS 0501
	2138	2400	HIRA	2209.0	2219.5	II		2	50	110	
			PALE	2210.0	2221.0	II		1	41U	98U	ESS 0355