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

MARCH 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
01	0000	0832	HIRA								
	0000	0800	CULG	0232.0	0232.0	III	B	1	25	80	
			CULG	0256.0	0359.0	I	S	1	150	250	
			CULG	0300.0	0351.0	III	N	1	30	180	
			CULG	0634.0	0634.0	III	B	1	23	130	
	0659	1531	ONDR								
			CULG	0725.0	0725.0	III	B	1	25	80	
			IZMI	0828.0	1200.0D	I	N	2	150	270X	
			IZMI	1015.2	1017.6	III	G	2	25X	175	
			SVTO	1016.0	1017.0	III		2	28U	170U	
			IZMI	1016.8	1017.1	V	G	2	25X	85	
			SVTO	1029.0	1029.0	III		1	71U	130U	
			IZMI	1029.4	1029.6	III	G	1	65	140	
			SVTO	1118.0	1119.0	III		1	75	141	
			IZMI	1118.6	1119.0	III	G	2	45	170	
			IZMI	1124.0	1124.3	III	G	1	40	60	
			SVTO	1327.0	1330.0	III		1	28U	143U	
			SVTO	1344.0	1617.0	III	N	1	28U	126U	
			HOLL	1531.0	1551.0	III		1	25	180	
			SGMR	1531.0	1540.0	III		1	30	50	
			SVTO	1538.0	1539.0	III		2	25	180	
	0730	1600	BLEN	1538.3	1539.2	III	V	2	120	350	
			HOLL	1649.0	1653.0	III		1	25	86	
			SGMR	1649.0	1900.0	III	N	1	30	80	
			HOLL	1755.0	1805.0	III		1	25	140	
			HOLL	1818.0	1825.0	III		1	25	180	
			HOLL	1859.0	0045.0	III	N	1	25	90	
	2000	2400	CULG	2039.0	2039.0	III	B	1	20	45	
			CULG	2047.0	2049.0	III	G	1	20	140	
	2108	2400	HIRA								
			CULG	2137.0	2139.0	III	G	3	18	120	
			PALE	2137.0	0236.0	CONT		1	25	180	
			CULG	2140.0	2144.0	III	G	1	100	180	
			CULG	2239.0	2239.0	III	B	1	30	130	
			CULG	2316.0	2400.0D	I	S	1	100	180	
02	0000	0800	CULG	0000.0E	0553.0	I	S	1	100	280	
			CULG	0017.0	0553.0	III	N	1	60	180	
			CULG	0108.0	0111.0	III	G	1	23	180	
			LEAR	0258.0	0550.0	CONT		1	79	180	
			PALE	0325.0	0419.0	CONT		1	25	180	
			LEAR	0406.0	0409.0	III		1	25	180	
			CULG	0407.0	0410.0	III	G	3	18	180	
	0000	0833	HIRA	0407.5	0409.5	III	G	1	25X	U	
			CULG	0515.0	0515.0	III	B	1	30	50	
	0657	1533	ONDR								
			IZMI	0734.0	1202.0D	I	N	2	160	270X	
			IZMI	0743.2	0746.4	III	G	1	55	80	
			IZMI	0805.8	0805.9	III	B	1	55	85	
			IZMI	0833.3	0833.5	III	B	1	45	65	
			IZMI	0836.4	0836.6	III	G	1	55	190	
			IZMI	0858.6	0900.3	III	GG	1	40	160	
			IZMI	0908.9	0909.0	III	G	1	145	205	
			IZMI	0942.4	0942.6	III	G	1	45	90	
			LEAR	1009.0	1011.0	III		1	25	180	
			IZMI	1015.5	1015.6	III	G	1	110	150	
			IZMI	1020.2	1021.9	III	G	1	45	155	
			IZMI	1101.8	1113.5	I	GG,DC	2	175	250	
			IZMI	1106.2	1107.4	III	G	1	110	175	
			IZMI	1200.9	1201.1	III	G	1	45	150	
			SVTO	1412.0	1418.0	III		1	28U	175U	
	2000	2400	CULG	2032.0	2040.0	III	G	1	20	160	
			HOLL	2037.0	2039.0	III		1	25	123	
			CULG	2230.0	2230.0	III	B	1	25	90	
			CULG	2247.0	2249.0	III	G	1	25	150	
	2107	2400	HIRA	2247.5	2249.0	III	G	1	25X	U	
			CULG	2300.0	2316.0	I	S	1	220	780	
			CULG	2320.0	2320.0	III	B	1	30	90	
			CULG	2350.0	2351.0	III	G	1	30	130	

S O L A R R A D I O E M I S S I O N
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MARCH 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
03	0000	0800	CULG	0001.0	0003.0	III	G	1	30	90	
			CULG	0225.0	0225.0	III	B	1	23	90	
	0000	0834	HIRA	0225.0	0225.5	III	B	1	25X	U	
			CULG	0229.0	0233.0	III	G	1	60	260	
			CULG	0326.0	0328.0	III	G	2	23	180	
			LEAR	0326.0	0328.0	III		1	25	180	
			HIRA	0326.5	0328.0	III	G	1	25X	U	
			CULG	0329.0	0332.0	III	G	1	35	130	
			LEAR	0518.0	0526.0	III		1	25	180	
			CULG	0519.0	0527.0	III	G	1	30	180	
			HIRA	0525.0	0526.0	III	B	1	25X	U	
	0654	1534	ONDR								
			CULG	0656.0	0657.0	III	G	1	30	90	
	0715	1605	BLEN								
			CULG	0735.0	0735.0	III	B	1	30	65	
			IZMI	0741.2	0741.3	III	G	1	120	240	
			IZMI	0820.2	0945.0U	I	N	1	220	260	
			LEAR	0942.0	0943.0	III		1	25	180	
			SVTO	0942.0	0943.0	III		1	61	180	
			IZMI	0942.5	0943.7	III	GG	2	40	270X	
			IZMI	0945.0	1200.0D	I	S,DC	2	110	270X	
			IZMI	0945.8	0946.7	III	G	1	45	95	
			IZMI	1003.2	1003.7	III	G	2	45	90	
			IZMI	1021.9	1022.1	III	G	1	45	160	
			SVTO	1029.0	1323.0	CONT		1	131	180	
			HOLL	1930.0	1937.0	III		1	25	180	
			SGMR	1931.0	1937.0	III		1	30	60	
	2010	2400	CULG	2010.0E	2107.0	I	S	1	100	170	
			CULG	2022.0	2103.0	III	N	1	20	100	
			HOLL	2031.0	2043.0	III		1	25	86	
	2105	2400	HIRA								
			CULG	2119.0	2119.0	III	B	1	30	80	
			CULG	2226.0	2226.0	III	B	1	35	80	
04	0000	0835	HIRA								
	0000	0800	CULG	0046.0	0046.0	III	B	1	40	80	
			CULG	0124.0	0127.0	III	G	1	27	160	
			CULG	0250.0	0251.0	III	G	1	60	90	
			CULG	0516.0	0517.0	III	G	1	60	200	
			LEAR	0516.0	0516.0	III		1	64	180	
			CULG	0601.0	0753.0	III	N	1	40	160	
	0652	1536	ONDR								
	0715	1605	BLEN								
	0700	1200	IZMI	0735.8	0738.8	III	G	1	55	65	
			IZMI	0837.7	0837.9	III	G	1	55	90	
			IZMI	0903.9	0904.0	III	B	1	45	65	
			IZMI	0925.8	0927.1	III	G	1	45	95	
			IZMI	1025.6	1025.7	III	B	1	55	90	
			IZMI	1103.5	1106.4	III	G	1	55	90	
			IZMI	1133.3	1133.6	III	G	1	55	90	
			IZMI	1151.2	1158.3	III	G	1	45	95	
	2104	2400	HIRA								
	2010	2400	CULG	2244.0	2244.0	III	B	1	40	90	
05	0000	0836	HIRA								
	0000	0800	CULG	0137.0	0138.0	III	G	1	27	70	
			CULG	0159.0	0159.0	III	B	1	40	120	
			LEAR	0159.0	0159.0	III		1	48	105	
			CULG	0258.0	0259.0	III	G	1	100	500	
			CULG	0611.0	0611.0	III	B	1	100	170	
	0650	1538	ONDR								
	0700	1200	IZMI	0654.5	0654.7	III	B	1	45	85	
			CULG	0655.0	0655.0	III	B	1	50	90	
	0715	1605	BLEN								
			IZMI	0807.2	0807.5	III	B	1	55	85	
			IZMI	0821.0	0821.1	III	B	1	45	85	
			IZMI	0822.3	0822.7	III	G	2	80	270X	
			IZMI	0912.0U	0956.0U	I	S	2	200	270X	
			IZMI	1054.3	1057.0	I	N	1	220	270X	

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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
05			IZMI	1129.7	1130.3	III	G	1	40	85	
	2102	2400	HIRA								
	2000	2400	CULG	2322.0	2342.0	I	S	1	170	300	
			LEAR	2327.0	2346.0	CONT		1	118	180	
06	0000	0837	HIRA								
	0000	0800	CULG	0112.0	0112.0	III	B	2	18	90	
			CULG	0243.0	0323.0	I	S	1	180	280	
			CULG	0440.0	0540.0	I	S	1	130	350	
			CULG	0554.0	0554.0	III	B	1	50	90	
	0647	1540	ONDR								
	0655	1200	IZMI	0712.8	0713.0	III	B	1	50	65	
	0715	1605	BLEN								
			IZMI	0811.0U	0846.0	I	N	2	220	270X	
			SGMR	1233.0	1234.0	III		1	35	55	
			SVTO	1233.0	1234.0	III		1	25	180	
	2101	2400	HIRA	2343.5	2344.0	III	B	1	U	600	
	2010	2400	CULG	2344.0	2344.0	III	B	1	300	620	
			CULG	2349.0	2354.0	III	G	1	80	160	
07	0000	0838	HIRA								
			LEAR	0020.0	1007.0	III	N	1	25	180	
	0000	0800	CULG	0020.0	0022.0	III	G	1	27	180	
			CULG	0038.0	0038.0	III	B	1	100	180	
			CULG	0101.0	0102.0	III	G	1	40	180	
			CULG	0123.0	0141.0	III	N	1	25	180	
			CULG	0244.0	0244.0	III	B	1	65	250	
			CULG	0324.0	0324.0	III	B	1	50	90	
			CULG	0335.0	0338.0	III	G	1	50	90	
			CULG	0435.0	0800.0D	III	N	1	30	180	
			SVTO	0624.0	0628.0	III		1	31	80	
	0650	1200	IZMI	0719.4	0719.7	CONT		2	130	200	
			IZMI	0728.9	0730.0	III	G,C	2	70	270X	
			LEAR	0729.0	0729.0	III		1	25	180	
			SVTO	0729.0	0729.0	III		1	114	180	
			CULG	0730.0	0730.0	III	B	1	65	260	
			SVTO	0737.0	0737.0	III		1	111	140	
			IZMI	0746.4	0746.5	III	B	1	55	85	
	0747	1541	ONDR								
			SVTO	0805.0	0826.0	III	N	2	38	180	
			IZMI	0811.8	0817.7	III	GG,FS	2	40	270X	
			LEAR	0817.0	0834.0	III		1	25	180	
			IZMI	0823.1	0825.6	III	GG	1	120	170	
			IZMI	0826.0	0826.3	III	G	2	110	175	
			IZMI	0832.4	0832.6	III	B	1	55	85	
			IZMI	0853.1	0856.7	III	GG	1	40	160	
			IZMI	0903.2	0903.3	III	B	1	50	65	
			IZMI	0930.5	0934.4	III	G	1	110	165	
			IZMI	0935.0	0935.1	III	G	2	110	165	
			SVTO	1010.0	1316.0	III	N	1	30	154	
			IZMI	1053.0	1200.0D	I	N	2	160	270X	
			IZMI	1110.8	1114.7	III	G	1	110	170	
			IZMI	1127.9	1128.6	III	G	2	45	180	
			IZMI	1135.9	1137.4	III	G	2	40	160	
			IZMI	1155.4	1158.1	III	G	1	110	180	
	1205	1605	BLEN								
			SGMR	1348.0	1349.0	III		2	30	80	
			SVTO	1348.0	1352.0	III		2	28U	180U	
			HOLL	1544.0	1545.0	III		1	25	180	
			SVTO	1544.0	1546.0	III		2	25	180	
			HOLL	1627.0	1627.0	III		1	102	180	
			HOLL	1646.0	1648.0	III		1	45	180	
			PALE	1729.0	2133.0	III	N	1	25	180	
			SGMR	1936.0	1936.0	III		1	30	65	
	2010	2400	CULG	2027.0	2049.0	III	N	2	18	180	
			SGMR	2033.0	2048.0	III		1	30	65	
	2100	2400	HIRA								
			CULG	2134.0	2134.0	III	G	1	40	160	
			CULG	2150.0	2150.0	III	B	1	57	90	

SOLAR RADIO EMISSION
Spectral Observations

MARCH 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
07			CULG	2214.0	2217.0	III	G	1	27	180	
			CULG	2259.0	2259.0	III	B	1	40	80	
08	0000	0839	HIRA								
			LEAR	0102.0	0608.0	III	N	1	25	180	
	0000	0800	CULG	0102.0	0122.0	III	N	1	30	180	
			CULG	0240.0	0243.0	III	G	1	23	80	
			CULG	0305.0	0305.0	III	B	1	35	80	
			CULG	0314.0	0314.0	III	B	1	50	180	
			CULG	0608.0	0608.0	III	B	1	27	90	
			SVTO	0608.0	0608.0	III		1	38U	79U	
	0700	1200	IZMI	0730.4	0730.5	III	B	1	130	175	
			IZMI	0751.9	0752.1	III	G	1	120	170	
			IZMI	0827.5	0828.6	III	G	1	55	90	
			IZMI	0848.2	0850.4	III	G	1	40	90	
			LEAR	0907.0	0908.0	III		1	25	180	
			SVTO	0907.0	0908.0	III		1	28U	83U	
			IZMI	0907.6	0908.1	III	G	2	25X	190	
	0730	1605	BLEN	0921.0	0942.6	DCIM	P	3	120	4000X	
			IZMI	0922.2	0922.9	III	B	1	40	90	
			ONDR	0925.4	0939.0	DCIM	GG	2	800X	2000X	
	0643	1544	ONDR	0925.4	0934.5	DCIM	GG	2	2000X	4500X	
			IZMI	0926.0	0934.0	I	S	2	180	270X	
			LEAR	0933.0	0934.0	III		1	88	180	
			IZMI	0933.4	0934.4	III	G	2	110	180	
			IZMI	0936.4	0936.4	III	B	1	80	120	
			ONDR	0946.2	0947.3	DCIM	GG	2	1016	1920	
			LEAR	0954.0	0954.0	III		1	25	180	
			SVTO	0954.0	0955.0	III		1	29U	138U	
			IZMI	1023.1	1023.1	III	B,RS	1	130	180	
			IZMI	1028.4	1028.8	III	G	1	25X	85	
			IZMI	1109.0	1109.1	III	B	1	110	160	
			IZMI	1125.2	1126.1	III	G	2	25X	155	
			IZMI	1142.3	1142.5	III	B	1	55	65	
			HOLL	1432.0	1438.0	III		1	39	180	
			SVTO	1432.0	1438.0	III		1	54U	151U	
			HOLL	1948.0	2230.0	III	N	1	60	127	
	2010	2400	CULG	2010.0E	2049.0	III	N	1	30	160	
			CULG	2032.0	2033.0	III	G	2	60	170	
	2059	2400	HIRA								
			CULG	2225.0	2250.0	III	N	1	30	100	
			HOLL	2313.0	2313.0	III		1	51	180	
			LEAR	2313.0	2313.0	III		1	46	180	
			PALE	2313.0	2313.0	III		1	46	180	
			CULG	2317.0	2317.0	III	B	1	60	90	
			CULG	2347.0	2400.0D	III	N	1	30	180	
09	0000	0800	CULG	0000.0E	0026.0	III	N	1	30	180	
			CULG	0011.0	0012.0	III	G	2	35	180	
			HOLL	0011.0	0017.0	III		1	25	180	
			LEAR	0011.0	0017.0	III		2	25	180	
			PALE	0011.0	0416.0	III	N	1	25	180	
	0000	0840	HIRA	0011.0	0017.5	III	G	1	25X	U	
			CULG	0017.0	0017.0	III	B	1	23	450	
			CULG	0159.0	0159.0	III	B	1	57	80	
			LEAR	0230.0	0232.0	III		3	25	180	
			CULG	0231.0	0231.0	III	G	3	18	250	
			HIRA	0231.0	0232.0	III	B	3	25X	U	
			CULG	0243.0	0244.0	III	G	1	25	180	
			LEAR	0243.0	0244.0	III		1	33	155	
			LEAR	0335.0	0339.0	III		1	35	175	
			HIRA	0335.5	0339.5	III	G	1	25X	U	
			CULG	0336.0	0342.0	III	G	1	30	180	
			CULG	0406.0	0432.0	III	N	1	30	180	
			CULG	0427.0	0428.0	III	G	2	23	180	
			HIRA	0427.0	0428.0	III	B	1	30	U	
			LEAR	0427.0	0427.0	III		2	25	180	
			CULG	0523.0	0612.0	III	N	1	30	180	
			CULG	0639.0	0716.0	III	N	1	30	180	

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MARCH 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			LEAR	0640.0	0647.0	III		2	25	180	
	0641	1545	ONDR								
			CULG	0644.0	0647.0	III	G	3	25	230	
			HIRA	0644.0	0647.0	III	B	2	30	U	
			CULG	0646.0	0651.0	V		1	30	130	
			CULG	0659.0	0705.0	UNCLF		1	35	85	
	0700	1200	IZMI	0701.1	0704.0	II		1	55	90	
			IZMI	0707.7	0708.0	III	B	1	55	85	
			IZMI	0716.9	0716.9	III	B	1	170	190	
			IZMI	0724.3	1143.0U	III	N	1	45	95	
			IZMI	0911.7	0911.7	III	B	2	45	65	
			IZMI	0930.0	0931.7	III	GG,C	2	25X	210	
			LEAR	0930.0	0931.0	III		1	25	180	
			IZMI	0945.0	0948.1	III	G	1	35	65	
			IZMI	1005.6	1006.8	III	GG	2	55	270X	
	0700	1610	BLEN	1353.7	1354.2	III	S	2	260	480	
			HOLL	1750.0	1752.0	III		2	25	180	
			PALE	1750.0	1753.0	III		2	25	180	
	2010	2400	CULG	2043.0	2043.0	III	B	1	35	90	
	2057	2400	HIRA								
			CULG	2359.0	2359.0	III	G	1	35	90	
10	0000	0800	CULG	0046.0	0046.0	III	B	1	30	45	
			LEAR	0242.0	1005.0	III	N	1	25	180	
			CULG	0245.0	0245.0	III	B	1	60	90	
			CULG	0306.0	0309.0	III	G	1	35	140	
	0000	0840	HIRA	0307.5	0308.0	III	B	1	30	U	
			CULG	0315.0	0316.0	III	G	2	20	140	
			HIRA	0315.0	0316.0	III	B	1	25X	U	
			CULG	0424.0	0426.0	III	G	1	25	75	
			CULG	0500.0	0533.0	III	N	1	18	100	
			CULG	0534.0	0548.0	III	GG	2	25	260	
			CULG	0550.0	0800.0D	III	S,C	1	30U	180	
			IZMI	0655.3	0656.4	III	GG	2	40	95	
			IZMI	0700.0E	1200.0D	III	N	1	40	95	
	0700	1200	IZMI	0700.0E	0750.0U	I	S	1	45	95	
			IZMI	0748.5	0751.5	III	GG	2	25X	180	
			IZMI	0757.4	0758.3	III	G	2	35	160	
			IZMI	0811.1	0813.5	III	G	2	25X	165	
			IZMI	0843.1	0851.3	III	GG,C	2	25X	270X	
			IZMI	0852.3	0854.6	I	GG	2	155	190	
			IZMI	0856.9	0859.1	III	G	1	50	180	
			IZMI	0907.7	0908.0	III	G,C	2	25X	120	
			IZMI	0942.0	1052.0	I	N	1	150	270X	
			IZMI	0949.4	0953.4	III	G	2	25X	85	
			IZMI	0959.9	1006.0	III	GG,C	2	25X	270X	
			LEAR	1001.0	1004.0	III		2	25	180	
	0700	1615	BLEN	1001.5	1003.6	III	GG,RS	3	100X	4000X	
			IZMI	1001.7	1004.8	CONT		2	25X	175	
			ONDR	1002.1	1004.1	DCIM	G	1	800X	2000X	
	0638	1547	ONDR	1002.2	1003.2	DCIM	G	1	2000X	4500X	
			BLEN	1040.1	1042.7	III	GG,RS	3	300	700	
			IZMI	1041.3	1041.5	III	G	2	35	95	
			BLEN	1048.1	1056.2	III	GG	2	100X	500	
			IZMI	1052.0	1200.0D	I	S	2	45U	250	
			IZMI	1052.8	1056.3	III	GG	2	25X	270X	
			IZMI	1114.1	1114.2	III	B	2	50	95	
			BLEN	1252.5	1257.0	III	GG	1	100X	700	
			SGMR	1256.0	1257.0	III		1	30	70	
			SGMR	1327.0	1327.0	III		1	30	70	
			ONDR	1335.5	1336.3	DCIM	G	2	955	1386	
			HOLL	1534.0	1535.0	III		1	36	157	
			HOLL	1913.0	1914.0	III		1	25	69	
	2010	2400	CULG	2034.0	2330.0	III	N	1	23	180	
	2055	2400	HIRA								
			CULG	2100.0	2400.0D	I	S	1	85	170	
			LEAR	2305.0	1004.0	III	N	1	25	85	
11	0000	0800	CULG	0000.0E	0800.0D	I	S	1	100	170	

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11			CULG	0002.0	0800.0D	III	N	1	20	180	
	0000	0841	HIRA	0154.5	0158.0	III	G	1	30	U	
			CULG	0156.0	0156.0	III	B	2	20	110	
			SVTO	0614.0	0746.0	III	N	1	28U	137U	
	0637	1549	ONDR								
			CULG	0700.0	0708.0	III	G	3	23	180	
			HIRA	0700.0	0708.5	III	G	1	30	U	
			IZMI	0700.0E	1200.0D	III	N	2	25X	95	
			IZMI	0700.3	0704.5	III	GG	2	25X	160	
			IZMI	0708.0	0709.6	III	GG	2	25X	270X	
			IZMI	0716.0U	1200.0D	I	N	1	110	250	
			HIRA	0746.5	0747.0	III	B	1	40	U	
			IZMI	0746.5	0746.9	III	G,C	2	25X	160	
			CULG	0747.0	0747.0	III	B	2	23	180	
			IZMI	0808.0	0808.4	III	G	1	45	215	
			IZMI	0828.1	0830.8	III	G	1	25X	95	
			IZMI	0838.2	0840.5	III	GG,C	1	25X	90	
			IZMI	0902.4	0903.4	III	G	2	25X	240	
			SVTO	0907.0	0908.0	III		1	25	147	
	0650	1615	BLEN	0907.6	0908.2	III	G,S	2	130	450	
			IZMI	0907.8	0908.6	III	G,C	2	28X	270	
			IZMI	0927.0	0929.5	III	G	2	25	215	
			IZMI	0942.9	0944.5	III	GG	2	30	195	
			IZMI	0949.4	0950.0	III	G,C	1	25X	155	
			IZMI	0956.0	1004.1	III	GG	2	25X	95	
			SVTO	0959.0	1001.0	V		3	25	180	
			IZMI	0959.8	1001.2	III	GG,C	3	25X	270X	
			IZMI	1045.2	1045.6	III	G,U	2	25X	155	
			IZMI	1057.2	1057.3	III	B	2	25X	95	
			IZMI	1128.3	1128.8	III	G	2	35	95	
			BLEN	1218.9	1227.3	III	GG	3	130	700	
			SGMR	1322.0	1322.0	III		1	30	65	
			HOLL	1414.0	1416.0	II		1	126	143	
			HOLL	1418.0	1418.0	III		1	40	62	
			SGMR	1418.0	1418.0	III		1	30	55	
			SGMR	1543.0	2222.0	III	N	3	30	80	
			PALE	1719.0	1720.0	III		1	26	84	
			PALE	1751.0	1752.0	III		1	25	132	
			HOLL	1839.0	1840.0	III		2	25	179	
			HOLL	1839.0	1840.0	III		2	25	180	
			PALE	1839.0	1840.0	III		2	25	180	
			PALE	1856.0	1916.0	III	N	2	25	180	
			PALE	1856.0	1944.0	III	N	2	25	180	
	2010	2400	CULG	2032.0	2400.0D	III	N	1	25	180	
			CULG	2034.0	2400.0D	I	S	1	60	180	
			CULG	2054.0	2054.0	III	B	3	25	160	
			CULG	2059.0	2059.0	III	G	3	25	160	
			CULG	2126.0	2127.0	III	G	3	20	170	
			CULG	2127.0	2128.0	V		3	20	90	
			CULG	2151.0	2151.0	III	B	2	25	180	
			CULG	2159.0	2159.0	III	B	2	20	35	
	2154	2400	HIRA	2327.5	2328.5	III	B	3	25X	U	
			CULG	2328.0	2328.0	III	B	3	18X	180	
			HIRA	2341.5	2342.0	III	B	3	25X	U	
			CULG	2342.0	2342.0	III	B	3	18X	280	
12			CULG	0000.0E	0800.0D	I	S	1	110	180	
	0000	0800	CULG	0000.0E	0538.0	III	N	1	23	180	
			CULG	0042.0	0046.0	III	G	2	25	260	
	0000	0842	HIRA	0042.0	0043.0	III	B	1	30	U	
			HIRA	0207.0	0213.0	III	G	1	25X	U	
			CULG	0209.0	0213.0	III	G	2	20	180	
			CULG	0618.0	0619.0	III	G	1	30	250	
	0652	1200	IZMI	0652.0E	1200.0D	I	S	1	110	270X	
			CULG	0658.0	0732.0	III	N	1	30	160	
			IZMI	0658.2	0658.5	III	B	2	35	150	
			IZMI	0732.2	0732.4	III	B	2	35	65	
			IZMI	0802.0	0802.1	III	G	1	45	90	
			IZMI	0807.9	0808.9	III	G	1	45	90	

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12			IZMI	0811.7	0812.3	III	G	1	45	95	
			IZMI	0821.0	0824.5	III	G	1	50	90	
			IZMI	0836.4	0837.1	III	G,C	1	40	95	
			IZMI	0917.7	0918.2	III	G	1	50	85	
			IZMI	0935.6	0937.1	III	G	1	120	270X	
	0645	1620	BLEN	0938.0	0939.8	III	GG,C,S	3	100X	4000X	
			ONDR	0938.2	0939.4	DCIM	GG	2	800X	1888	
			IZMI	0938.3	0939.9	III	GG,C,F,S	2	35	170X	
	0633	1551	ONDR	0938.4	0939.4	DCIM	G	1	2381	4500X	
			IZMI	1008.8	1009.0	III	B	1	25X	45	
			IZMI	1017.0	1017.0	III	B	1	45	90	
			IZMI	1032.9	1053.0	III	G	1	125	160	
			IZMI	1034.7	1035.0	III	G	2	50	160	
			IZMI	1038.4	1140.9	III	G	1	45	90	
			IZMI	1058.0	1058.9	III	G	1	50	85	
			IZMI	1104.4	1104.5	III	G,C	1	55	65	
			IZMI	1117.6	1117.9	III	G	2	40	240	
			IZMI	1140.2	1142.1	III	GG	2	85	215	
			CULG	2010.0E	2400.0D	III	N	1	23	150	
	2010	2400	CULG	2010.0E	2400.0D	I	S,C	1	100	180	
	2152	2400	HIRA								
			HOLL	2153.0	2310.0	III	N	1	25	180	
13			CULG	0000.0E	0108.0	III	N	1	23	90	
	0000	0800	CULG	0000.0E	0800.0D	I	S	1	100	180	
			CULG	0147.0	0800.0D	III	N	1	23	180	
			CULG	0210.0	0216.0	III	G	3	18X	230	
			LEAR	0210.0	0219.0	III		1	25	180	
	0000	0843	HIRA	0210.0	0216.0	III	G	1	25X	U	
	0631	1553	ONDR								
	0640	1630	BLEN								
			IZMI	0701.0E	1200.0U	I	N	1	110	270	
	0701	1200	IZMI	0701.0E	1200.0U	III	N	1	25X	95	
			IZMI	0725.6	0726.8	III	G	2	40	95	
			SVTO	0747.0	0749.0	III		1	25	140	
			IZMI	0749.2	0749.6	III	G,HARM	2	35	190	
			IZMI	0821.5	0821.9	III	B.C	1	55	95	
			IZMI	0838.6	0838.9	III	G.C	1	40	85	
			IZMI	0934.4	0934.6	III	B	2	40	65	
			IZMI	1003.5	1003.6	III	G	1	180	250	
			IZMI	1019.5	1019.7	III	B,U	2	115	215	
			SVTO	1020.0	1020.0	III		1	25U	84U	
			IZMI	1020.2	1020.5	III	G,C	2	35	270X	
			IZMI	1106.5	1107.0	III	G,C	2	55	270X	
			IZMI	1149.6	1152.0	III	GG,C	2	35	215	
			SGMR	1150.0	1150.0	III		1	30	80	
			SVTO	1150.0	1151.0	III		2	30	180	
			IZMI	1157.3	1158.4	III	G	2	50	240	
			SGMR	1316.0	1318.0	III		1	30	80	
			HOLL	1424.0	1506.0	III	N	1	25	141	
			SVTO	1425.0	1456.0	III	N	2	25	180	
			HOLL	1555.0	1635.0	III	N	2	25	180	
			SVTO	1604.0	1605.0	III		2	25	180	
			HOLL	1659.0	1659.0	III		1	25	90	
			SGMR	1808.0	1811.0	III		2	30	65	
			PALE	1945.0	0342.0	III	N	1	25	180	
			HOLL	1946.0	1958.0	III		1	25	140	
	2010	2400	CULG	2013.0	2013.0	III	B	1	35	90	
			CULG	2047.0	2151.0	III	N	1	23	90	
			CULG	2048.0	2400.0D	I	S	1	110	180	
			CULG	2154.0	2155.0	III	G	2	27	90	
	2151	2400	HIRA	2154.5	2155.0	III	B	1	30	U	
			CULG	2223.0	2231.0	III	GG	1	27	160	
			HOLL	2225.0	2228.0	III		1	25	85	
			HIRA	2225.5	2226.0	III	B	1	25X	U	
			CULG	2320.0	2320.0	III	B	1	25	90	
			LEAR	2338.0	2339.0	III		2	25	150	
			HIRA	2338.5	2339.5	III	B	2	25	U	
			CULG	2339.0	2339.0	III	G	3	20	180	

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13			LEAR	2357.0	0109.0	III	N	1	25	100	
			CULG	2358.0	2358.0	III	B	1	23	180	
14	0000	0800	CULG	0000.0E	0800.0D	I	S	1	110	180	
			CULG	0007.0	0800.0D	III	N	1	25	180	
			LEAR	0205.0	1002.0	III	N	2	25	175	
			CULG	0213.0	0213.0	III	B	2	18	90	
	0000	0844	HIRA	0213.0	0213.5	III	B	1	30	U	
			CULG	0233.0	0233.0	III	B	2	20	90	
			HIRA	0233.0	0233.5	III	B	1	30	U	
			CULG	0304.0	0304.0	III	B	3	18X	230	
			HIRA	0304.0	0304.5	III	B	2	25X	U	
			CULG	0412.0	0412.0	III	G	2	20	90	
			HIRA	0412.0	0412.5	III	B	1	25X	U	
			CULG	0437.0	0437.0	III	B	2	20	90	
			CULG	0451.0	0453.0	III	G	2	20	160	
			CULG	0541.0	0541.0	III	B	2	30	170	
			HIRA	0541.0	0542.0	III	B	1	25X	U	
			SVTO	0541.0	0541.0	III		1	30	77	
			SVTO	0613.0	1632.0	III	N	2	25	170	
	0629	1554	ONDR								
			IZMI	0700.0E	1204.0D	III	N	1	45	95	
	0700	1204	IZMI	0700.0E	1204.0D	I	N	1	110	220	
			IZMI	0700.8	0702.6	I	GG,C	2	135	145	
			IZMI	0735.7	0736.8	III	G	2	45	95	
			IZMI	0741.8	0742.2	III	G,HARM	2	55	90	
			IZMI	0749.2	0750.6	III	GG	2	30	180	
			CULG	0750.0	0750.0	III	B	2	25	160	
			IZMI	0751.5	0800.3	III	GG	2	30	180	
			IZMI	0836.3	0836.7	III	B	2	40	95	
			IZMI	0919.8	0920.8	II	G,C	2	40	270X	
			IZMI	0948.5	0949.0	III	G	1	35X	90	
			IZMI	1046.4	1047.0	III	G,HARM	2	30	90	
			IZMI	1124.7	1127.0	III	G	1	30	95	
			IZMI	1149.4	1149.9	III	G	1	70	265	
			SGMR	1306.0	1402.0	III	N	1	30	65	
	0640	1630	BLEN	1505.5	1506.6	III	GG	2	120	400	
			SGMR	1516.0	1601.0	III	N	1	30	80	
			PALE	1729.0	0334.0	III	N	1	25	180	
			SGMR	1813.0	1814.0	III		1	30	65	
			SGMR	1905.0	1955.0	III	N	1	30	80	
			HOLL	2031.0	2108.0	III	N	1	25	180	
	2010	2400	CULG	2032.0	2032.0	III	B	1	25	90	
			CULG	2036.0	2036.0	III	B	1	25	90	
			CULG	2057.0	2400.0D	I	S	1	110	180	
			CULG	2114.0	2114.0	III	B	1	23	90	
			CULG	2132.0	2400.0D	III	N	1	25	180	
	2150	2400	HIRA								
15	0000	0058	HIRA								
			CULG	0000.0E	0126.0	I	S	1	120	180	
	0000	0800	CULG	0000.0E	0800.0D	III	N	1	20	180	
			LEAR	0117.0	0118.0	III		1	25	81	
			LEAR	0225.0	0242.0	III	N	2	25	180	
			CULG	0226.0	0227.0	III	G	3	23	240	
			LEAR	0319.0	1000.0	III	N	2	25	180	
			CULG	0324.0	0326.0	III	G	3	18X	260	
			CULG	0329.0	0330.0	III	G	2	57	360	
			CULG	0334.0	0335.0	III	G	2	18X	180	
			CULG	0415.0	0416.0	III	G	3	18X	180	
			CULG	0516.0	0516.0	III	B	2	18	180	
			CULG	0521.0	0521.0	III	B	3	18	440	
			SVTO	0523.0	0659.0	III	N	1	25	180	
	0711	1200	IZMI	0711.0E	1200.0U	I	N	1	120	190	
			IZMI	0713.7	0713.9	III	G	1	55	165	
			IZMI	0735.4	0741.9	III	GG	1	45	90	
			IZMI	0814.8	0815.0	III	B	2	50	85	
			IZMI	0826.9	0829.5	III	G	1	35	85	
			SVTO	0829.0	0829.0	III		1	28U	43U	

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15			IZMI	0917.3	0917.5	III	B	1	45	85	
			IZMI	0945.7	0945.9	III	B	1	40	160	
			IZMI	0952.1	0953.8	I	GG,DC	2	135	165	
			IZMI	1018.7	1022.0	III	G	1	55	85	
			IZMI	1028.0	1028.2	III	G	1	30	65	
			IZMI	1031.3	1034.3	III	G	1	45	65	
			ONDR	1039.0	1039.3	DCIM	G	2	1166	2000X	
	0627	1556	ONDR	1039.0	1039.3	DCIM	G	2	2000X	2645	
	0640	1630	BLEN	1039.1	1039.8	III	GG,RS	3	1270	2700	
			IZMI	1050.0	1050.1	III	B	1	50	85	
			IZMI	1057.7	1057.8	III	B	1	45	90	
			IZMI	1103.6	1104.3	III	G	2	60	215	
			IZMI	1110.6	1114.1	III	GG	1	35	165	
			IZMI	1131.3	1136.1	III	GG	2	50	170	
			IZMI	1144.8	1145.0	III	G	2	80	190	
			BLEN	1326.0	1327.3	III	GG,RS	3	100X	3500	
			SVTO	1326.0	1330.0	III		1	25	180	
			SVTO	1338.0	1342.0	III		1	32U	155U	
			SGMR	1342.0	1343.0	III		1	30	80	
			ONDR	1524.0	1529.3	DCIM	G	2	2000X	4500X	
			ONDR	1524.1	1527.3	DCIM	GG	2	800X	2000X	
			BLEN	1524.6	1530.5	DCIM	P,C	3	140	4000X	
			SGMR	1526.0	1527.0	III		1	30	50	
			SVTO	1526.0	1527.0	III		1	39U	81U	
			PALE	1658.0	0016.0	CONT		1	25	180	
			HOLL	2002.0	2038.0	III		1	25	180	
			SGMR	2002.0	2006.0	III		1	30	80	
	2010	2400	CULG	2010.0E	2400.0D	III	S,C	1	20	180	
			CULG	2036.0	2050.0	III	GG	2	20	90	
			PALE	2042.0	2043.0	V		2	25	180	
			SGMR	2042.0	2045.0	V		2	30	80	
			CULG	2043.0	2043.0	III	G	3	23	180	
			CULG	2136.0	2136.0	III	B	2	20	45	
			CULG	2145.0	2151.0	III	G	1	360	520	
			HOLL	2213.0	2214.0	III		1	25	180	
	2149	2400	HIRA	2213.5	2214.5	III	B	2	30	U	
			CULG	2214.0	2215.0	III	G	2	20	180	
			PALE	2214.0	2214.0	III		1	25	180	
			LEAR	2305.0	0508.0	III	N	2	25	180	
			CULG	2307.0	2308.0	UNCLF		2	30	70	
			HIRA	2307.0	2307.5	II		1	30	40	
			HOLL	2307.0	2307.0	III		1	25	75	
			LEAR	2307.0	2307.0	II		1	32	75	ESS 2043
16	0000	0800	CULG	0000.0E	0058.0	III	N	1	20	180	
			CULG	0002.0	0003.0	III	G	3	27	200	
			LEAR	0002.0	0002.0	III		2	25	180	
			PALE	0002.0	0003.0	III		2	25	180	
	0000	0845	HIRA	0002.0	0003.5	III	G	2	30	U	
			HIRA	0025.0	0033.5	III	G	2	30	U	
			HOLL	0025.0	0033.0	III		1	25	180	
			CULG	0030.0	0033.0	III	G	3	20	200	
			CULG	0041.0	0042.0	III	G	3	23	180	
			CULG	0054.0	0055.0	III	G	2	20	180	
			CULG	0356.0	0800.0D	III	S,C	1	27	180	
			LEAR	0430.0	1000.0	CONT		1	25	180	
			SVTO	0521.0	1012.0	CONT		1	36U	180U	
			LEAR	0541.0	0542.0	III		2	25	180	
			CULG	0542.0	0542.0	III	G	2	27	230	
			IZMI	0700.0E	1128.0U	III	N	1	45	95	
	0700	1200	IZMI	0700.0E	1200.0U	I	N	2	50	270X	
	0635	1635	BLEN	0755.6	0755.7	III	B	1	240	400	
			BLEN	0806 7	0810.9	II	H, C	3	130	400	
			ONDR	0806.5	0810.5	DCIM	G	1	800X	2000X	
	0625	1558	ONDR	0807.0	0808.3	DCIM	G	1	2000X	4432	
			IZMI	0807.9	0809.4	II	HARM	2	130	270X	
			LEAR	0809.0	0809.0	III		1	25	180	
			SVTO	0809.0	0813.0	III		2	33	79	
			IZMI	0809.4	0809.8	III	G,C	2	40	215	

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16			HIRA	0809.5	0810.0	III	B	1	40	U	
			IZMI	0810.0U	0811.6	IV		2	110	170	
			LEAR	0812.0	0813.0	III		1	25	180	
			IZMI	0812.7	0813.7	III	GG,FS	2	35	95	
			HIRA	0813.0	0813.5	III	B	2	40	U	
			IZMI	0838.5	0838.7	III	G	2	95	160	
			IZMI	0927.9	0928.0	III	G	1	140	215	
			IZMI	0950.8	0951.4	III	G	1	50	95	
			IZMI	1035.8	1035.9	III	B	2	50	90	
			HOLL	1458.0	1505.0	III		1	25	72	
			SVTO	1505.0	1505.0	III		1	25	62	
			HOLL	2058.0	2104.0	III		1	25	87	
			PALE	2104.0	2104.0	III		1	25	136	
			SGMR	2104.0	2104.0	III		1	30	50	
	2000	2400	CULG	2104.0	2104.0	III	B	2	25	160	
			CULG	2134.0	2159.0	III	N	1	20	40	
	2148	2400	HIRA								
			CULG	2229.0	2229.0	III	B	1	30	90	
			HOLL	2359.0	0003.0	III		1	25	180	
17	0000	0846	HIRA								
	0000	0800	CULG	0210.0	0210.0	III	B	1	20	70	
			CULG	0215.0	0800.0D	III	N	1	25	180	
	0656	1202	IZMI	0704.3	0709.6	III	G	1	45	90	
			SVTO	0748.0	0755.0	III		2	25	59	
			IZMI	0753.3	0754.6	III	G	2	25X	155	
			IZMI	0823.0U	1129.0U	I	N	1	130	260	
			IZMI	0825.4	0825.5	III	B	1	45	65	
			SVTO	0857.0	0858.0	III		1	25	65	
			IZMI	0857.3	0858.8	III	G	2	25X	155	
			IZMI	0932.7	0932.8	III	B	1	45	85	
			IZMI	0947.0	0948.0	III	G	2	25X	165	
	0622	1559	ONDR	0949.3	0950.3	DCIM	G	1	800X	1808	
	0630	1635	BLEN	0949.3	0950.6	III	GG,RS,C	2	260	1800	
			SVTO	1008.0	1014.0	V		2	25	180	
			IZMI	1008.5	1008.8	III	G,U	2	110	215	
			BLEN	1008.6	1014.7	DCIM	P	3	100X	1700	
			ONDR	1010.4	1011.5	DCIM	G	1	800X	2000X	
			ONDR	1010.5	1011.3	DCIM	G,W	1	2000X	4139	
			IZMI	1010.8	1012.5	III	GG,C,F,S	2	25X	270X	
			IZMI	1014.4	1014.7	III	G	2	25X	155	
			IZMI	1024.8	1024.9	III	B	1	25X	85	
			SVTO	1147.0	1148.0	III		1	25	60	
			IZMI	1147.8	1148.2	III	B	2	25X	95	
			ONDR	1149.5	1153.5	DCIM	GG	1	800X	2000X	
			BLEN	1149.6	1155.1	DCIM	P	3	250	4000X	
			IZMI	1152.3	1152.4	UNCLF		2	125	270X	
			ONDR	1341.4	1342.4	DCIM	G,W	1	2000X	4256	
			BLEN	1341.7	1342.9	DCIM	C	1	700	4000X	
			HOLL	1437.0	1437.0	III		1	25	87	
			SVTO	1437.0	1437.0	III		1	42U	84U	
			HOLL	1458.0	1459.0	III		1	25	88	
			SVTO	1458.0	1459.0	III		1	38	85	
			HOLL	1614.0	1614.0	III		1	25	139	
			SGMR	1614.0	1614.0	III		1	30	55	
			SVTO	1614.0	1614.0	III		1	28	117	
			HOLL	1638.0	1640.0	III		1	25	85	
			SGMR	1638.0	1640.0	III		1	30	50	
			BLEN	1638.2	1639.9	DCIM	P	3	200	1800	
			HOLL	1841.0	2350.0	III	N	1	25	180	
			PALE	1842.0	1842.0	III		1	25	180	
			SGMR	1843.0	2015.0	III	N	3	30	80	
			PALE	1857.0	1859.0	III		2	25	180	
			PALE	1901.0	1905.0	III		1	25	180	
			PALE	1948.0	1949.0	III		1	25	180	
	2000	2400	CULG	2000.0E	2107.0	CONT		1	30U	160	
			CULG	2014.0	2027.0	III	G	1	20	180	
			PALE	2014.0	2015.0	III		1	25	155	
			CULG	2018.0	2104.0	III	N	1	20	45	

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17			CULG	2120.0	2120.0	III	B	1	40	180	
			CULG	2134.0	2134.0	III	B	1	20	320	
			CULG	2258.0	2300.0	III	G	1	20	260	
	2146	2400	HIRA	2259.5	2300.0	III	B	1	40	U	
			CULG	2325.0	2326.0	III	G	1	23	180	
			CULG	2332.0	2400.0D	III	N	1	25	90	
18	0000	0800	CULG	0000.0E	0035.0	III	N	1	25	120	
			LEAR	0033.0	0034.0	III		2	25	180	
			CULG	0034.0	0034.0	III	G	3	18X	500	
			PALE	0034.0	0034.0	III		1	25	180	
	0000	0847	HIRA	0034.0	0034.5	III	B	3	25X	1100	
			CULG	0140.0	0140.0	III	B	1	27	160	
			CULG	0151.0	0800.0D	I	S	1	110	170	
			CULG	0202.0	0232.0	III	N	1	25	150	
			LEAR	0221.0	0223.0	III		1	49	126	
			CULG	0321.0	0321.0	III	G	1	100	320	
			CULG	0403.0	0404.0	III	G	1	300	800	
			CULG	0441.0	0800.0D	III	N	1	30	180	
			CULG	0536.0	0536.0	III	B	1	40	260	
			CULG	0544.0	0601.0	III	G	1	18	1000	
			HIRA	0554.0	0600.0	III	G	1	U	1200	
			SVTO	0559.0	0600.0	III		1	25	180	
	0655	1200	IZMI	0655.0E	1120.0U	I	N	1	120	190	
	0620	1601	ONDR	0656.4	0718.2	DCIM	G	2	800X	1016	
			ONDR	0759.3	0802.4	DCIM	G	2	800X	1569	
	0625	1640	BLEN	0800.9	0806.9	III	G,RS,V	2	200	1200	
			IZMI	0820.2	0822.1	III	G	1	45X	155	
			ONDR	0853.1	0858.2	DCIM	G	2	800X	2000X	
			BLEN	0857.2	0858.7	III	GG,S,C	2	100X	4000X	
			IZMI	0857.2	0858.4	III	G	2	125	270X	
			ONDR	0857.4	0858.2	DCIM	G	1	2098	4500X	
			BLEN	0916.6	0922.7	III	G,RS	2	390	1100	
			IZMI	0930.5	0930.7	UNCLF		1	200	215	
			IZMI	0943.7	0943.8	III	B	2	45	85	
			IZMI	0947.0	0947.1	III	B	1	50X	85	
			IZMI	1032.6	1032.8	III	G	1	185	270X	
			BLEN	1053.2	1054.3	III	GG	2	160	700	
			IZMI	1103.5	1110.4	III	GG	1	45	95	
			IZMI	1108.3	1119.7	III	G	2	55	160	
			BLEN	1133.3	1142.8	III	GG,S	1	160	420	
			IZMI	1133.4	1134.1	III	G	2	55	270X	
			IZMI	1136.6	1136.7	III	B	2	240	270X	
			IZMI	1142.4	1142.4	III	B	2	240	270X	
			IZMI	1147.3	1149.0	III	G	1	55	270X	
			BLEN	1148.7	1313.6	IV	P,C,S	1	100X	4000X	
			ONDR	1156.2	1349.3	DCIM	GG,FS	2	2000X	4500X	
			ONDR	1158.3	1335.4	DCIM	GG,SP,FS	3	800X	2000X	
			IZMI	1159.7	1200.5	III	G	2	50	85	
			BLEN	1205.0X	1216.5	II	H	1	100X	780	
			SVTO	1208.0	1216.0	III		2	25	180	
			SGMR	1211.0	1229.0	III	N	3	30	80	
			SGMR	1216.0	1220.0	II		3	30	80	ESS 0850
			SVTO	1216.0	1221.0	II		1	25	73	ESS 0507
			SVTO	1219.0	1318.0	IV		2	25	180	
			SVTO	1220.0	1230.0	II		1	25	73	ESS 0507
			HOLL	1339.0	1400.0	III	N	1	25	180	
			SGMR	1339.0	1352.0	III	N	2	30	80	
			SVTO	1339.0	1342.0	III		2	25	140	
			HOLL	1348.0	1352.0	II		1	52	147	ESS 0901
			SVTO	1351.0	1401.0	II		2	25	138	ESS 1425
			SVTO	1431.0	1437.0	III		1	25	74	
			HOLL	1641.0	1641.0	III		1	25	126	
			HOLL	1641.0	1711.0	III	N	1	25	180	
			SGMR	1641.0	1641.0	III		1	30	75	
			SGMR	1707.0	1711.0	III		1	30	50	
	2010	2400	CULG	2102.0	2105.0	III	G	1	23	90	
	2144	2400	HIRA								
			CULG	2233.0	2233.0	III	B	1	27	70	

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19	0000	0800	CULG	0030.0	0030.0	III	B	1	60	90	
			PALE	0107.0	0109.0	III		1	25	54	
			CULG	0108.0	0110.0	III	G	3	18X	160	
	0000	0848	HIRA	0108.0	0109.5	III	G	3	25X	U	
			LEAR	0110.0	0110.0	III		1	25	180	
			CULG	0215.0	0217.0	III	G	3	18X	180	
			HIRA	0215.0	0219.0	III	G	2	25X	U	
			LEAR	0215.0	0219.0	V		2	25	180	
			PALE	0215.0	0217.0	V		2	25	180	
			PALE	0217.0	0224.0	III		1	25	180	
			CULG	0218.0	0220.0	III	G	2	30	180	
			CULG	0221.0	0221.0	III	B	1	120	280	
			CULG	0222.0	0230.0	II	SH	1	70	130	FLA ESS 550
			LEAR	0223.0	0235.0	II		1	25	180	ESS 0333
			CULG	0224.0	0225.0	III	G	2	25	90	
			PALE	0225.0	0235.0	III		1	25	180	
			CULG	0230.0	0240.0	III	GG	3	20	50	
			HIRA	0230.5	0234.0	III	G	1	30	U	
			CULG	0339.0	0339.0	III	B	1	20	75	
			CULG	0402.0	0402.0	III	B	1	20	57	
	0625	1640	BLEN	0645.1	0646.7	III	G,C	2	1100	4000X	
			CULG	0700.0	0700.0	III	B	1	23	50	
			LEAR	0843.0	0844.0	III		1	25U	180U	
			SVTO	0843.0	0844.0	III		1	25	125	
			BLEN	0843.9	0844.1	III	G	2	100X	350	
	0658	1200	IZMI	0843.9	0844.4	III	G	2	25X	270X	
	0618	1603	ONDR	0950.1	0955.0	DCIM	G	2	2000X	4500X	
			ONDR	0950.5	0952.0	DCIM	G	1	1138	2000X	
			BLEN	0950.6	0956.6	DCIM	C	3	560	4000X	
			IZMI	1026.5	1027.9	III	G	2	25X	270X	
			ONDR	1123.1	1124.3	DCIM	GG	3	814	1414	
			BLEN	1123.5	1124.9	III	S,C	3	560	4000X	
			ONDR	1123.5	1127.5	DCIM	G	1	2000X	4500X	
			SVTO	1156.0	1205.0	III		1	25	44	
			IZMI	1156.4	1156.7	III	G	1	35	155	
			SGMR	1307.0	1307.0	III		2	30	70	
			SVTO	1307.0	1307.0	III		2	25	84	
			ONDR	1328.5	1333.4	DCIM	G	1	2000X	4500X	
			BLEN	1328.7	1334.4	III	GG,C	3	1200	4000X	
			ONDR	1329.0	1331.5	DCIM	G	1	1114	2000X	
			PALE	2134.0	0337.0	III	N	1	25	180	
	2010	2400	CULG	2154.0	2157.0	III	G	1	20	45	
			CULG	2158.0	2159.0	III	G	1	18	460	
	2143	2400	HIRA	2158.0	2158.5	III	G	1	25X	600	
20	0000	0800	CULG								
			LEAR	0516.0	0517.0	III		1	25	144	
	0700	1200	IZMI	0711.0	1150.0U	I	N	2	120	270X	
			LEAR	0727.0	0727.0	III		1	25	76	
	0625	1640	BLEN	0728.7	0729.3	III	GG,RS	1	300	700	
			SVTO	0829.0	0829.0	III		1	25	77	
	0000	0849	HIRA	0829.0	0829.5	III	B	1	30	U	
			IZMI	0829.3	0829.5	III	B	2	35	75	
			SVTO	0849.0	0850.0	III		1	25	39	
			IZMI	0849.7	0849.9	III	G	1	45	85	
			IZMI	0934.0	0934.2	III	B	1	45	65	
			IZMI	0957.0	0957.1	III	B	1	165	265	
			ONDR	1126.5	1137.5	DCIM	G	2	800X	2000X	
	0616	1604	ONDR	1127.1	1130.3	DCIM	G	2	2000X	4500X	
			BLEN	1127.2	1129.4	III	GG,C	3	470	4000X	
			IZMI	1136.0	1136.4	III	B	1	45	95	
			BLEN	1144.5	1145.6	III	GG	1	180	550	
			IZMI	1144.7	1145.0	III	G	1	55	120	
			HOLL	2055.0	2056.0	III		1	28	86	
	2010	2400	CULG	2055.0	2056.0	III	G	1	23	130	
	2141	2400	HIRA								
21	0000	0123	HIRA								
	0000	0800	CULG	0037.0	0037.0	III	B	1	20	45	

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21	0247	0507	HIRA								
			CULG	0529.0	0529.0	III	B	1	23	80	
	0620	1645	BLEN								
	0622	0850	HIRA								
	0700	1200	IZMI								
	0613	1606	ONDR	0901.1	0902.2	DCIM	G,W	1	2000X	4246	
	2010	2400	CULG								
	2139	2400	HIRA								
22	0000	0851	HIRA								
	0000	0800	CULG	0253.0	0254.0	III	G	1	40	160	
	0611	1608	ONDR								
	0703	1200	IZMI								
	0615	1645	BLEN	1111.8	1112.2	III	GG,RS	1	380	900	
	2010	2400	CULG								
	2138	2400	HIRA								
23			LEAR	0045.0	0047.0	III		2	25	180	
			HOLL	0046.0	0046.0	III		1	25	180	
	0000	0800	CULG	0046.0	0047.0	III	G	2	30	180	
	0000	0852	HIRA	0046.0	0047.0	III	B	1	30	U	
			CULG	0337.0	0337.0	III	B	1	40	90	
	0609	1609	ONDR								
	0615	1645	BLEN								
	0655	1202	IZMI	0950.6	0951.1	III	G	1	45	90	
			IZMI	1027.9	1028.7	III	GG	2	25X	170	
			IZMI	1154.4	1158.8	III	G	1	45	65	
			IZMI	1200.0	1201.2	I	GG,DC	2	130	160	
			IZMI	1201.2	1201.3	III	B	2	120	190	
	2010	2400	CULG								
	2136	2400	HIRA								
24	0000	0800	CULG								
	0000	0853	HIRA								
	0607	1611	ONDR								
	0615	1645	BLEN								
	0703	1200	IZMI								
	2010	2400	CULG								
	2135	2400	HIRA								
25			LEAR	0318.0	0319.0	III		1	72	180	
	0000	0800	CULG	0318.0	0319.0	III	G	1	35	280	
	0000	0854	HIRA	0321.0	0321.5	III	B	1	30	U	
			CULG	0510.0	0511.0	III	G	1	30	180	
	0604	1613	ONDR								
	0655	1200	IZMI	1143.4	1144.4	III	G	1	180	270X	
	0610	1645	BLEN	1223.6	1224.2	III	GG,S	2	100X	600	
			SGMR	1224.0	1224.0	III		1	40	55	
			SVTO	1224.0	1224.0	III		1	25	180	
			SVTO	1250.0	1250.0	III		1	25	78	
	2010	2400	CULG								
	2134	2400	HIRA								
26	0000	0800	CULG	0212.0	0217.0	III	G	1	30	140	
			CULG	0322.0	0324.0	III	G	1	35U	160	
			LEAR	0528.0	0538.0	III		1	25	180	
			SVTO	0528.0	0529.0	III		1	25	75	
			CULG	0529.0	0529.0	III	G	1	20	180	
	0000	0855	HIRA	0529.0	0529.5	III	B	1	40	200	
			HIRA	0538.5	0539.0	III	B	1	50	130	
			CULG	0539.0	0539.0	III	B	1	20	180	
	0602	1614	ONDR								
	0700	1200	IZMI	0843.6	0843.8	III	B	1	45	165	
			SVTO	1402.0	1402.0	III		1	25	79	
			HOLL	1418.0	1420.0	III		1	25	180	
			SGMR	1418.0	1524.0	III	N	2	30	80	
			SVTO	1418.0	1420.0	III		1	25	180	
			HOLL	1437.0	1730.0	III	N	1	25	180	
			SVTO	1437.0	1437.0	III		2	25	180	

SOLAR RADIO EMISSION
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MARCH 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			SVTO	1437.0	1524.0	III	N	2	25	180	
			SGMR	1619.0	1631.0	III	N	2	30	80	
			SVTO	1619.0	1624.0	III		1	25	180	
	0610	1645	BLEN	1619.0	1624.0	III	GG	2	100X	400	
			SVTO	1630.0	1631.0	III		1	25	180	
	2010	2400	CULG	2103.0	2105.0	III	G	1	20	130	
	2132	2400	HIRA								
27	0000	0855	HIRA								
	0000	0800	CULG	0011.0	0011.0	III	B	1	30	90	
			CULG	0030.0	0031.0	III	G	1	30	130	
	0700	1200	IZMI	0744.3	0744.4	III	B	1	180	260	
			IZMI	0838.6	0838.8	III	G	2	110	270X	
	0600	1650	BLEN	0838.6	0839.1	III	GG	2	140	580	
			IZMI	0856.4	0909.6	I	N	1	210	270X	
			IZMI	0928.6	0928.7	III	B	1	40	145	
			IZMI	1002.0	1002.1	III	B	1	45	95	
			IZMI	1011.0	1011.2	III	G,C	2	110	270X	
			SVTO	1011.0	1015.0	III		1	25	180	
			IZMI	1014.7	1014.9	III	G	2	25X	210	
			IZMI	1017.3	1017.4	III	B	1	45	90	
			IZMI	1101.9	1103.6	III	G	1	200	265	
			IZMI	1107.3	1107.4	III	G	2	35	155	
			SVTO	1112.0	1238.0	III	N	2	25	180	
			IZMI	1112.8	1113.0	III	G	2	80	270	
			IZMI	1115.9	1117.5	III	GG	2	25X	270X	
			IZMI	1129.7	1130.3	II	G	2	00	160	
			IZMI	1137.2	1137.3	III	B	1	110	190	
			IZMI	1144.2	1144.7	III	G	1	50	180	
			SGMR	1205.0	1209.0	III		2	30	80	
			BLEN	1238.1	1238.7	III	GG	2	180	450	
			HOLL	1335.0	1415.0	III	N	1	26	168	
			HOLL	1335.0	1652.0	III	N	1	25	180	
			SVTO	1335.0	1345.0	III		2	25	180	
			SGMR	1340.0	1345.0	III		2	30	70	
			SVTO	1420.0	1423.0	III		2	25	135	
			SGMR	1429.0	1702.0	III	N	2	30	80	
			SVTO	1429.0	1429.0	III		1	25	48	
			SVTO	1454.0	1456.0	III		2	25	180	
	0600	1616	ONDR	1454.0	1455.3	DCIM	G,W	1	2000X	4500X	
			BLEN	1454.2	1457.0	III	GG	2	100X	450	
			SVTO	1530.0	1530.0	III		1	25	137	
			BLEN	1554.9	1557.9	III	GG	2	200	420	
			SVTO	1605.0	1606.0	III		1	25	137	
			HOLL	2039.0	2039.0	III		1	29	148	
			PALE	2039.0	2039.0	III		1	25	155	
	2020	2400	CULG	2039.0	2040.0	III	G	1	20	150	
	2130	2400	HIRA								
			CULG	2230.0	2233.0	III	G	1	20	180	
28	0000	0856	HIRA								
	0000	0800	CULG	0319.0	0320.0	III	G	1	30U	180	
			CULG	0515.0	0515.0	III	G	1	30U	160	
	0558	1617	ONDR								
			CULG	0640.0	0640.0	III	B	3	18	180	
			SVTO	0640.0	0654.0	III	N	1	25	180	
			CULG	0645.0	0645.0	III	B	2	23	180	
			IZMI	0725.7	0729.7	III	GG	1	35	135	
			IZMI	0735.5	0738.3	III	GG,FS	2	25X	270X	
			CULG	0736.0	0741.0	III	G	2	20	200	
			SVTO	0736.0	1417.0	III	N	2	25	180	
			IZMI	0739.5	0741.2	III	GG	2	25X	270X	
			CULG	0757.0	0757.0	III	B	1	25	150	
			IZMI	0757.0	0758.0	III	G	2	25X	270X	
			IZMI	0815.2	0818.5	III	GG	1	25X	260	
			IZMI	0842.0	0842.2	III	G	2	40	155	
			IZMI	0902.6	0903.9	III	GG	2	25X	270	
			IZMI	1104.4	1106.5	III	GG	2	25X	270X	
			IZMI	1109.3	1109.5	III	B	2	45	180	

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MARCH 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
28			IZMI	1128.0	1128.2	III	G	2	25X	270X	
			SGMR	1128.0	1239.0	III	N	2	30	80	
	0600	1650	BLEN	1128.0	1131.2	III	GG	2	100X	350	
			IZMI	1130.3	1131.8	III	GG	2	25X	270X	
			IZMI	1148.7	1150.3	III	GG	2	25X	215	
			IZMI	1151.3	1151.4	III	B	1	80	215	
			IZMI	1156.2	1156.9	III	GG	1	25X	215	
			HOLL	1417.0	1417.0	III		1	44	180	
			SGMR	1535.0	1645.0	III	N	2	30	55	
			SVTO	1535.0	1547.0	III	N	1	34	155	
			PALE	1735.0	1736.0	III		1	25	159	
			SGMR	1735.0	1936.0	III	N	3	30	80	
			PALE	1800.0	0140.0	III	N	1	25	178	
			PALE	1932.0	1936.0	III		1	25	65	
			PALE	1952.0	1952.0	III		1	25	54	
	2020	2400	CULG	2031.0	2034.0	III	G	1	25	180	
			SGMR	2033.0	2136.0	III	N	2	30	80	
			CULG	2101.0	2140.0	III	N	1	25	180	
			CULG	2106.0	2106.0	III	B	2	25	180	
	2128	2400	HIRA								
			CULG	2231.0	2234.0	III	G	1	27	180	
			CULG	2318.0	2320.0	III	G	1	20	180	
			CULG	2354.0	2357.0	III	G	1	30	90	
29			LEAR	0037.0	0037.0	III		1	25	180	
	0000	0800	CULG	0037.0	0037.0	III	B	1	18	180	
			CULG	0050.0	0053.0	III	G	1	25	180	
			LEAR	0050.0	0053.0	III		1	25	180	
	0000	0857	HIRA	0051.0	0051.5	III	B	1	50	200	
			CULG	0131.0	0140.0	III	G	1	30	180	
			CULG	0217.0	0218.0	III	G	1	27	140	
			CULG	0230.0	0231.0	III	G	1	30	150	
			CULG	0314.0	0318.0	III	G	1	40U	180	
			CULG	0417.0	0422.0	III	G	1	27	180	
			CULG	0507.0	0535.0	III	N	1	27	180	
			LEAR	0520.0	0522.0	III		1	25	180	
			HIRA	0520.5	0521.0	III	B	1	50	130	
	0700	1200	IZMI	0722.0U	0900.0U	I	N	1	130	260	
			LEAR	0925.0	0947.0	III	N	1	25	180	
			IZMI	0925.9	0957.0	III	S	2	25X	260	
			SVTO	0927.0	0945.0	III	N	1	25	180	
	0556	1619	ONDR	1014.2	1023.2	DCIM	G,W	1	2000X	4500X	
			SVTO	1016.0	1021.0	III		2	25	180	
			IZMI	1016.4	1017.2	III	G	1	25X	160	
			ONDR	1017.3	1021.1	DCIM	G	1	800X	2000X	
	0600	1655	BLEN	1017.4	1021.2	DCIM	C	2	100X	4000X	
			IZMI	1018.4	1019.8	III	GG,C	2	25X	270X	
			IZMI	1020.4	1021.3	III	GG	2	25X	270X	
			IZMI	1025.2	1051.0	III	N	1	30	165	
			SVTO	1040.0	1046.0	III		1	25U	46U	
			ONDR	1226.5	1230.0	DCIM	G	1	2303	4500X	
			BLEN	1227.0	1227.9	DCIM	C	2	2100	4000X	
			SVTO	1303.0	1312.0	III		2	25	180	
			ONDR	1303.5	1310.1	DCIM	GG	1	800X	1320	
			BLEN	1303.6	1311.2	III	GG	2	100X	4000X	
			SGMR	1304.0	1310.0	III		2	30	80	
			SVTO	1342.0	1343.0	III		1	25	78	
			SVTO	1500.0	1506.0	III		1	25U	156U	
			ONDR	1501.4	1506.1	DCIM	G	1	2000X	4500X	
			ONDR	1501.5	1510.4	DCIM	G	1	800X	2000X	
			BLEN	1501.6	1510.9	DCIM	C	2	100X	4000X	
			SVTO	1510.0	1556.0	III	N	1	25	180	
			HOLL	1837.0	1839.0	III		1	25	180	
			SGMR	1837.0	1900.0	III	N	1	30	70	
			PALE	1838.0	1839.0	III		1	25	180	
			HOLL	1850.0	2015.0	III	N	1	25	180	
			HOLL	2049.0	2050.0	III		1	25	180	
			SGMR	2049.0	2050.0	III		1	30	80	
	2020	2400	CULG	2049.0	2055.0	III	G	1	40U	180	

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MARCH 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
29	2127	2400	HIRA								
30	0000	0858	HIRA								
			LEAR	0215.0	0215.0	III		1	64	126	
	0000	0800	CULG	0215.0	0215.0	III	B	1	60U	90	
			CULG	0552.0	0552.0	III	B	1	100	180	
	0553	1620	ONDR								
	0555	1655	BLEN								
	0606	1200	IZMI	0606.0E	1200.0D	I	N	1	180U	270X	
			IZMI	1000.4	1000.9	III	G	1	40	95	
	2020	2400	CULG	2057.0	2057.0	III	B	1	40U	60	
	2126	2400	HIRA								
			CULG	2156.0	2156.0	III	B	1	20	60	
31	0000	0800	CULG	0020.0	0020.0	III	B	1	60U	90	
	0000	0859	HIRA	0020.0	0020.5	III	B	1	25X	110	
	0551	1622	ONDR								
	0555	1655	BLEN								
	0555	1200	IZMI	0757.3	0757.5	III	B	1	45	90	
			IZMI	0956.0	0956.2	III	B	1	45	85	
			SVTO	1126.0	1126.0	III		1	25	150	
			IZMI	1126.1	1126.3	III	b	2	25X	170	
			SVTO	1248.0	1252.0	III		1	25	69	
			SGMR	1252.0	1252.0	III		1	30	60	
	2020	2400	CULG	2036.0	2114.0	III	N	1	20	90	
	2125	2400	HIRA								
			CULG	2227.0	2228.0	III	G	1	65	170	
			CULG	2235.0	2238.0	III	G	1	65	170	

Event Remarks:

B = Single burst
C = Underlyling continuum (particularly with Type I)
DC = Drifting chains
DP = Drifting pairs
F = Fundamental emission (Type II)
FS = Fine structures (Type IV)
G = Small group of bursts (<10)
GG = Large group of bursts (>10)
H = Herringbone
HARM = Harmonic
N = Intermittent activity in this period
MOV = Moving (Type IV)
MWB = Meter wave burst
RS = Reverse slope burst
S = Storm in the sense of intermittent but apparently connected actively
SH = Secondary harmonic emission
STA = Stationary (Type IV)
U = U-shaped burst of Type III
UE = Uncertain emission (Type II)
W = Weak

Frequency qualifiers:

X = Extends beyond instrument range
U = Uncertain frequency

Remarks:

SWF = Associated short wave fade observed
ESS = Estimated shock speed in km/s (Type II)
FLA = Associated flare observed (class optional)

Stations Reporting:

CULG = Culgoora IZMI = Izmiran LEAR = Learmonth ONDR = Ondrejov
PALE = Palehua POTS = Potsdam SGMR = Sagamore Hill SVTO = San Vito
BLEN = Bleien

NOTE: Beginning June 26, 2001, the Bleien observatory changed to higher frequencies (1-4Ghz).