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

JULY 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
01			LEAR	0025.0	0026.0	III		1	25	50	
			PALE	0025.0	0026.0	III		1	25	52	
	0000	0700	CULG	0040.0	0041.0	III	G	1	50	300	
			CULG	0222.0	0222.0	III	B	1	75	500	
			LEAR	0222.0	0222.0	III		1	153	180	
	0000	1000	HIRA	0222.0	0222.5	III	B	1	130	300	
	0418	1753	ONDR								
			IZMI	0600.0U	1200.0D	III	N	1	25X	95	
	0600	1200	IZMI	0600.0E	1200.0D	I	S	2	110	270X	
			CULG	0613.0	0640.0	III	N	1	40	170	
			LEAR	0622.0	0910.0	CONT		1	66	180	
			IZMI	0622.4	0622.8	III	B	2	45	155	
			IZMI	0632.0	0632.1	III	B	2	45	95	
			IZMI	0649.7	0650.0	III	G	2	125	270X	
			IZMI	0829.2	0829.4	III	B	1	45	160	
			SVTO	0842.0	1800.0	CONT		1	25	180	
			SVTO	0906.0	0906.0	III		1	25	54	
			IZMI	0906.5	0906.8	III	G	1	30	95	
			IZMI	0915.9	0917.6	I	GG,DC	2	210	260	
			IZMI	0916.7	0916.8	III	B	1	50	95	
			IZMI	0924.4	0924.6	III	B	1	45	150	
			IZMI	0941.9	0949.0	III	GG	2	25X	170	
			IZMI	1032.3	1032.4	III	B	2	50	65	
			IZMI	1118.0	1118.2	III	B	2	45	65	
			IZMI	1146.6	1155.4	III	GG	2	25X	95	
			SVTO	1405.0	1449.0	III	N	2	25	180	
			HOLL	1429.0	1449.0	III	N	1	25U	75U	
			SGMR	1430.0	1449.0	III	N	2	30U	80U	
	2110	2400	CULG	2110.0E	2400.0D	I	S,C	1	110	170	
	1922	2400	HIRA	2253.5	2254.0	III	B	1	60	200	
			CULG	2254.0	2254.0	III	B	1	65	180	
			CULG	2311.0	2316.0	III	G	1	30U	250	
			LEAR	2344.0	0910.0	CONT		1	65	180	
02	0000	0700	CULG	0000.0E	0700.0D	I	S	1	100	150	
	0000	1000	HIRA	0128.5	0129.0	III	B	1	80	230	
			CULG	0129.0	0129.0	III	B	1	20	230	
			HIRA	0131.5	0132.0	III	B	1	90	240	
			CULG	0132.0	0132.0	III	B	1	30	140	
			SVTO	0356.0	1800.0	CONT		1	75	180	
			CULG	0525.0	0525.0	III	B	1	60	180	
	0600	1200	IZMI	0600.0E	1200.0D	I	S	2	110U	270X	
			IZMI	0603.1	0605.8	I	GG,DC	2	135	160	
			IZMI	0605.0U	1030.0U	III	N	1	45	95	
			IZMI	0616.9	0623.6	I	GG,DC	2	125	160	
			SVTO	0620.0	0620.0	III		1	25	69	
			IZMI	0620.5	0620.8	III	B	1	25X	95	
			IZMI	0648.1	0648.2	III	B	2	45	65	
			ONDR	0709.4	0720.3	DCIM	G	2	800X	2000X	
	0419	1753	ONDR	0711.3	0718.2	DCIM	G	2	2000X	4500X	
			IZMI	0819.2	0819.7	III	G	2	25X	95	
			SVTO	0846.0	0849.0	III		1	25	48	
			IZMI	0846.6	0849.0	III	G	2	25X	85	
			SVTO	0932.0	1022.0	III	N	1	25	62	
			IZMI	0953.3	0958.1	I	GG,DC	2	160	250	
			IZMI	0956.1	0958.0	III	G	1	50	160	
			IZMI	1022.2	1022.3	III	B	2	40	95	
			SVTO	1318.0	1439.0	III	N	1	25	180	
			HOLL	1327.0	1327.0	III		1	25	75	
			HOLL	1551.0	1828.0	III	N	1	25U	75U	
			SVTO	1551.0	1644.0	III	N	1	25	123	
			HOLL	1858.0	1858.0	III		1	25U	75U	
			PALE	1858.0	1858.0	III		1	25	126	
			SGMR	1858.0	1858.0	III		1	30	50	
	1923	2400	HIRA								
			PALE	2105.0	2105.0	III		1	25	73	
			CULG	2110.0E	2400.0D	III	N	1	25	150	
	2110	2400	CULG	2110.0E	2400.0D	I	S,C	1	100	180	
			LEAR	2346.0	0911.0	CONT		1	58	180	

SOLAR RADIO EMISSION
Spectral Observations

JULY 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			CULG	0000.0E	0339.0	III	N	1	30	130	
	0000	0700	CULG	0000.0E	0342.0	I	S,C	1	100	160	
			CULG	0110.0	0112.0	III	G	1	50	180	
			LEAR	0139.0	0140.0	III		1	52	180	
	0000	1000	HIRA	0139.5	0142.0	III	G	1	100	330	
			CULG	0140.0	0141.0	III	G	1	50	300	
			SVTO	0356.0	1800.0	CONT		1	83	180	
	0419	1753	ONDR								
			SVTO	0432.0	1800.0	CONT		1	80	180	
			CULG	0535.0	0700.0D	III	N	1	20	180	
			SVTO	0552.0	0556.0	III		1	25	81	
			HIRA	0553.5	0554.0	III	B	1	25X	100	
			IZMI	0553.7	0553.9	III	B	2	25X	95U	
			CULG	0554.0	0554.0	III	B	2	23	100	
			IZMI	0602.0E	1202.0D	III	N	1	25X	95	
	0602	1202	IZMI	0602.0E	1202.0D	I	S	2	110	270X	
			SVTO	0615.0	0723.0	III	N	1	25	162	
			CULG	0620.0	0700.0D	I	S,C	1	100	160	
			IZMI	0656.1	0701.3	III	GG	2	25X	95	
			LEAR	0713.0	0721.0	III	N	1	25	180	
			IZMI	0713.6	0721.1	III	GG	2	25X	270X	
			IZMI	0719.9	0720.1	III	G	2	25X	270X	
			HIRA	0815.0	0815.5	III	B	1	30	100	
			IZMI	0815.0	0815.2	III	G,FS	2	25X	95	
			LEAR	0815.0	0815.0	III		1	25	180	
			SVTO	0815.0	0815.0	III		1	25	83	
			IZMI	0854.0	0854.2	III	G	2	25X	95	
			SVTO	0854.0	0854.0	III		1	25	151	
			IZMI	0926.0	0926.9	III	GG,C	1	25X	175	
			IZMI	0927.4	0928.4	III	GG	1	45	165	
			IZMI	1007.0	1009.6	III	GG	1	45	160	
			IZMI	1018.2	1018.3	III	B	2	25	95	
			IZMI	1025.7	1026.9	III	G	2	45	90	
			IZMI	1044.9	1045.3	III	G,FS	1	50	85	
			IZMI	1054.0	1054.5	III	G	2	25X	160	
			SVTO	1054.0	1115.0	III	N	1	25	82	
			IZMI	1114.6	1115.0	III	G	2	25X	95	
			SVTO	1422.0	1712.0	III	N	1	25	180	
			HOLL	1711.0	1711.0	III		1	25	86	
			PALE	1711.0	1711.0	III		1	25	135	
			SGMR	1711.0	1712.0	III		2	30	55	
			PALE	1823.0	1825.0	III		1	25	134	
			HOLL	1824.0	1825.0	III		1	25	87	
			SGMR	1824.0	1826.0	III		2	30	65	
			PALE	2023.0	2023.0	III		1	25	82	
			PALE	2039.0	2039.0	III		1	25	75	
			SGMR	2039.0	2039.0	III		1	30	55	
	1923	2400	HIRA	2039.0	2039.5	III	B	1	25X	110	
			PALE	2057.0	2100.0	III		1	25	92	
			PALE	2109.0	0456.0	III	N	1	25	133	
	2110	2400	CULG	2110.0E	2400.0D	I	S,C	1	60	140	
			CULG	2123.0	2123.0	III	B	1	25	170	
			CULG	2148.0	2400.0D	III	N	1	23	100	
			LEAR	2322.0	0911.0	CONT		1	25	180	
04			CULG	0000.0E	0700.0D	III	N	1	23	100	
	0000	0700	CULG	0000.0E	0700.0D	I	S,C	1	60	140	
			LEAR	0233.0	0234.0	III		1	25	121	
	0000	1000	HIRA	0234.0	0234.5	III	B	1	50	110	
			SVTO	0548.0	1800.0	III	N	1	25	180	
			IZMI	0600.0E	1200.0D	III	N	1	25X	95U	
	0600	1200	IZMI	0600.0E	1200.0D	I	S	2	60U	170X	
			IZMI	0617.6	0618.6	III	G	2	25X	95	
			IZMI	0707.0	0711.9	III	GG	2	180	270X	
			IZMI	0825.5	0826.8	III	GG	2	25X	160	
			IZMI	0906.9	0907.2	III	G	2	50	180	
			IZMI	0908.1	0909.0	III	GG	2	25X	145	
			IZMI	0921.5	0922.1	III	G	2	25X	160	
			IZMI	0945.8	0946.0	III	B	2	50	160	

S O L A R R A D I O E M I S S I O N
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JULY 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
04			IZMI	0952.5	0953.7	III	GG	1	180	270X	
			IZMI	1002.0	1009.7	III	GG	2	110	270X	
			IZMI	1013.8	1015.9	III	G	2	45	160	
			IZMI	1035.5	1037.3	III	GG	2	45	95	
			IZMI	1047.9	1049.7	III	G	2	25X	145	
			IZMI	1109.0	1111.6	III	GG	2	25X	165	
			IZMI	1126.1	1128.5	III	GG	2	25X	175	
			IZMI	1158.2	1158.2	III	B	2	50	95	
			SVTO	1223.0	1800.0	CONT		2	25	180	
			HOLL	1339.0	1340.0	III		1	25	86	
			SGMR	1339.0	1340.0	III		2	30	80	
			HOLL	1432.0	1447.0	III	N	1	25	180	
	0420	1753	ONDR	1436.4	1444.0	DCIM	G	2	800X	2000X	
			SGMR	1446.0	1509.0	II		3	30	80	
			HOLL	1455.0	1507.0	II		1	25	58	ESS 0359
			SVTO	1455.0	1509.0	II		2	25	82	ESS 0413
			SGMR	1545.0	1816.0	CONT		1	30	80	
			ONDR	1637.3	1640.0	DCIM	G	2	800X	2000X	
			PALE	1805.0	1838.0	III	N	1	25	180	
			PALE	1805.0	1838.0	III	N	1	25U	180U	
	1923	2400	HIRA								
			SGMR	2047.0	2135.0	III	N	1	30	80	
			CULG	2110.0E	2400.0D	I	S	2	60	160	
	2110	2400	CULG	2110.0E	2400.0D	III	S,C	1	30	260	
			PALE	2300.0	2332.0	CONT		1	25	180	
			PALE	2300.0	2332.0	CONT		1	25U	180U	
			LEAR	2344.0	0911.0	CONT		1	25	180	
05	0000	1000	HIRA								
			CULG	0000.0E	0531.0	I	S	2	40	120	
	0000	0700	CULG	0000.0E	0700.0D	III	S,C	1	20	180	
	0420	1752	ONDR								
			SVTO	0517.0	0853.0	III	N	1	25	180	
			IZMI	0600.0E	1200.0D	III	S	2	25X	95	
	0600	1200	IZMI	0600.0E	1200.0D	I	S,C	2	45	270X	
			IZMI	0614.7	0615.0	III	B	2	35	130	
			IZMI	0646.0	0659.2	I	GG,DC	2	160	240	
			IZMI	0648.9	0652.1	III	GG	2	25X	175	
			SVTO	0650.0	1800.0	CONT		2	25	180	
			IZMI	0708.4	0712.0	I	GG	2	50	160	
			IZMI	0711.1	0712.1	III	G	2	25X	160	
			IZMI	0714.8	0717.1	I	GG,DC	2	80	110	
			IZMI	0718.9	0719.2	III	G	2	25X	65	
			IZMI	0815.0	0819.4	III	G	2	25X	95	
			IZMI	0823.3	0826.2	III	G	2	25X	95	
			IZMI	0840.6	0849.6	III	GG	2	25X	140	
			IZMI	0933.6	0935.9	III	GG	2	25X	95	
			SVTO	0935.0	0935.0	III		1	25	53	
			IZMI	1032.5	1037.0	III	GG	2	25X	95	
			SVTO	1035.0	1800.0	III	N	2	25	160	
			IZMI	1052.0	1200.0D	I	S,DC	2	25X	160	
			IZMI	1102.9	1106.8	III	GG	2	25X	75	
			SGMR	1116.0	2100.0	CONT		2	30	80	
			IZMI	1116.7	1116.9	III	G	2	200	270X	
			IZMI	1135.9	1139.0	III	GG	1	130	250	
			HOLL	1319.0	0153.0	CONT		1	38	162	
			HOLL	1327.0	2050.0	III	N	1	25	151	
			PALE	1612.0	0441.0	CONT		1	25	180	
			SGMR	2220.0	2230.0	III		1	30	80	
	1924	2400	HIRA	2220.0	2231.0	III	G	2	25X	150	
			HOLL	2319.0	2321.0	III		2	25	163	
			HIRA	2320.0	2321.0	III	B	2	25X	200	
			SGMR	2320.0	2321.0	III		1	30	80	
			LEAR	2344.0	0912.0	CONT		2	42	180	
06			HOLL	0026.0	0030.0	III		1	25	165	
			LEAR	0026.0	0030.0	III		2	25	180	
	0000	1000	HIRA	0026.5	0030.5	III	G	1	25X	240	
			HIRA	0056.0	0104.5	III	G	2	25X	190	

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JULY 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
06			HOLL	0056.0	0100.0	III		1	25	174	
			LEAR	0154.0	0203.0	III		2	25	180	
			HIRA	0202.0	0203.0	III	G	3	25X	210	
			HIRA	0319.0	0337.5	III	G	2	25X	220	
			LEAR	0319.0	0337.0	III	N	1	25	180	
			SVTO	0355.0	1800.0	CONT		2	25	180	
	0421	1752	ONDR								
			LEAR	0438.0	0912.0	III	N	1	25	180	
			SVTO	0438.0	0452.0	III	N	2	25	180	
			HIRA	0438.5	0453.0	III	G	3	25X	330	
	0553	1202	IZMI	0553.0E	1202.0D	I	S,C	2	90	270X	
			IZMI	0600.6	0600.7	III	B	2	60	130	
			IZMI	0604.0U	1202.0D	III	N	1	25X	95U	
			SVTO	0640.0	0810.0	III	N	1	25	180	
			IZMI	0640.1	0640.4	III	B	2	45	140	
			IZMI	0658.3	0658.7	III	G,HARM	2	25X	170	
			HIRA	0728.0	0731.0	III	G	1	30	250	
			IZMI	0728.0	0733.2	III	GG	2	35	265	
			IZMI	0744.6	0747.2	III	GG,C	2	25X	190	
			HIRA	0746.5	0747.5	III	G	1	30	200	
			HIRA	0810.0	0810.5	III	B	1	30	220	
			IZMI	0810.0	0811.4	III	G,C	2	25X	270	
			IZMI	0811.9	0813.9	I	GG,DC	2	160	270	
			IZMI	0813.0	0913.7	III	GG	1	50	160	
			IZMI	0820.4	0824.0	I	GG,DC	2	110	250	
			IZMI	0822.6	0823.8	III	G	1	30	180	
			IZMI	0841.6	0841.6	III	B	2	45	95	
			HIRA	0936.5	0938.0	III	G	1	70	130	
			IZMI	0936.8	0937.8	III	GG	2	45	190	
			IZMI	1025.8	1027.6	III	G	2	45	90	
			IZMI	1059.6	1100.5	III	G	1	180	270X	
			IZMI	1101.6	1105.6	III	GG,C	2	25X	250	
			SVTO	1103.0	1105.0	III		2	25	180	
			SGMR	1104.0	1105.0	III		2	30	55	
			HOLL	1326.0	1327.0	III		1	25	61	
			HOLL	1413.0	2045.0	III	N	1	25	126	
			SVTO	1413.0	1800.0	III	N	2	25	180	
			PALE	1613.0	2217.0	III	N	1	25	180	
	1925	2400	HIRA	2001.0	2003.5	III	G	2	25X	310	
			HIRA	2147.0	2157.5	III	G	2	25X	200	
			HOLL	2147.0	2157.0	III		1	25	180	
			HOLL	2319.0	2323.0	III		1	25	180	
			PALE	2319.0	2324.0	III		1	25	180	
			HIRA	2322.5	2324.0	III	G	1	25X	260	
07			LEAR	0147.0	0148.0	III		1	25	180	
			PALE	0147.0	0158.0	III		1	25	180	
			LEAR	0157.0	0158.0	III		1	25	180	
	0000	1000	HIRA	0157.0	0157.5	III	B	1	25X	230	
			LEAR	0315.0	0912.0	III	N	1	25	180	
			HIRA	0355.0	0356.0	III	G	1	30	220	
	0422	1752	ONDR								
			HIRA	0435.0	0435.5	III	B	1	30	70	
			SVTO	0435.0	0435.0	III		1	25	64	
			SVTO	0537.0	0544.0	III		2	25	180	
			HIRA	0537.5	0539.5	III	G	3	25X	240	
			SVTO	0604.0	0606.0	V		2	25	170	
			IZMI	0604.1	0606.2	III	G,C	2	25X	140U	
			HIRA	0605.0	0606.0	III	B	1	25X	210	
			IZMI	0614.6	0614.8	III	B	1	55	95	
			IZMI	0616.0E	1059.0U	III	N	1	45U	95U	
	0606	1200	IZMI	0616.0E	1200.0D	I	S	1	75U	270X	
			IZMI	0625.0	0625.6	III	G	2	30	95	
			SVTO	0625.0	0625.0	III		1	25	66	
			IZMI	0705.0	0705.6	III	G	2	160	270X	
			IZMI	0747.4	0747.6	III	B	2	45	95	
			IZMI	0754.6	0757.8	III	GG	2	35	160	
			SVTO	0755.0	0801.0	III		1	25	118	
			IZMI	0800.9	0802.1	III	G	2	25X	120	

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Spectral Observations

JULY 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	0813.7	0813.8	III	B	2	120	185	
			IZMI	0834.9	0838.7	III	G	2	25X	95	
			SVTO	0835.0	1759.0	III	N	1	25	180	
			IZMI	0842.5	0843.1	III	G	2	25X	95	
			IZMI	0846.4	0852.0	III	GG	2	45	170	
			IZMI	0857.3	0905.1	III	GG	2	25X	165	
			IZMI	0929.5	0930.0	III	G	2	25X	90	
			SGMR	1227.0	1227.0	III		1	30	55	
			SGMR	1304.0	1304.0	III		1	30	55	
			HOLL	1534.0	1537.0	III		1	25	83	
			PALE	1927.0	1927.0	III		1	25	59	
			SGMR	1927.0	1944.0	III	N	2	30	55	
	1925	2400	HIRA	1927.0	1927.5	III	B	1	25X	50	
			HOLL	2215.0	0006.0	III	N	1	25	90	
			HIRA	2312.5	2314.0	III	G	1	25X	310	
08			LEAR	0006.0	0355.0	CONT		1	78	180	
			LEAR	0057.0	0101.0	III		1	25	180	
			HOLL	0058.0	0101.0	III		1	25	178	
			PALE	0058.0	0105.0	III		1	25	180	
	0000	0153	HIRA	0059.5	0101.5	III	G	2	25X	200	
			LEAR	0225.0	0228.0	V		2	25	180	
			PALE	0226.0	0228.0	III		2	25	180	
			PALE	0244.0	0248.0	III		1	25	131	
			LEAR	0245.0	0254.0	III		1	25	180	
			LEAR	0354.0	0403.0	III		1	25	180	
			PALE	0358.0	0403.0	III		1	25	180	
			SVTO	0359.0	0418.0	III	N	1	25	180	
	0555	1202	IZMI	0702.5	0702.7	III	G	2	110	270X	
			LEAR	0721.0	0722.0	III		1	25	110	
			SVTO	0721.0	0722.0	III		1	25	60	
			IZMI	0721.6	0728.3	III	GG	2	25X	140	
	0537	1000	HIRA	0722.0	0722.5	III	B	1	25X	70	
	0422	1751	ONDR	0727.2	0731.2	DCIM	GG	2	800X	1827	
			IZMI	0727.4	0727.8	III	GG	2	115	270X	
			IZMI	0802.9	0804.2	III	G	1	50	85	
			LEAR	0839.0	0847.0	III		1	25	155	
			SVTO	0839.0	0847.0	III		1	25	83	
			IZMI	0839.3	0842.2	III	G,C	2	25X	240	
			HIRA	0839.5	0840.0	III	B	1	60	110	
			IZMI	0846.9	0848.5	III	G	1	25X	65	
			IZMI	0920.0U	1155.0U	I	N	1	50	160	
			IZMI	0923.3	0923.5	III	G	2	130	240	
			IZMI	0933.8	0935.1	III	GG	2	130	260	
			SVTO	0937.0	0938.0	III		1	61	150	
			HIRA	0937.5	0938.0	III	B	1	80	240	
			IZMI	0937.6	0939.1	III	GG,U	2	60	270X	
			IZMI	1036.7	1036.7	III	B	1	20	265	
			IZMI	1041.7	1043.0	III	G	1	45	95	
			SVTO	1050.0	1050.0	III		1	25	47	
			IZMI	1050.3	1051.2	III	GG,C	1	25X	250	
			IZMI	1116.8	1118.8	III	GG	2	110	270X	
			IZMI	1138.5	1139.0	III	G	1	95	175	
			IZMI	1142.2	1142.3	III	G	1	160	240	
			SVTO	1145.0	1145.0	III		1	25	44	
			IZMI	1145.2	1145.9	III	G	1	160	240	
			IZMI	1151.0	1152.2	I	GG	2	130	160	
			HOLL	1321.0	1322.0	V		1	25	180	
			SGMR	1321.0	1322.0	V		3	30	80	
			SVTO	1321.0	1327.0	V		2	25	180	
			HOLL	1408.0	1409.0	III		1	25	119	
			SVTO	1408.0	1408.0	III		1	25	52	
			SVTO	1428.0	1429.0	III		1	135	180	
			HOLL	1546.0	1805.0	III	N	1	25	180	
			SVTO	1546.0	1641.0	III	N	1	25	180	
			SGMR	1548.0	1641.0	III	N	2	30	80	
			SGMR	1726.0	1733.0	III		2	30	80	
			SVTO	1726.0	1733.0	III		1	25	180	
			PALE	1736.0	1739.0	III		2	25	180	

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08			HOLL	1946.0	2215.0	III	N	1	25	82	
			PALE	2006.0	2009.0	III		1	25	155	
			SGMR	2006.0	2009.0	III		2	30	80	
	1926	2400	HIRA	2006.0	2009.5	III	G	2	25X	200	
09	0000	1000	HIRA								
			LEAR	0506.0	0510.0	III		1	32U	47U	
			SVTO	0506.0	0510.0	III		1	32	43	
	0600	1200	IZMI	0600.0E	0723.0U	I	N	1	120	210	
			IZMI	0715.6	0722.3	I	GG	2	130	150	
			IZMI	1049.4	1050.5	III	GG	2	55	240	
			HOLL	1321.0	1323.0	III		1	25	162	
			SGMR	1321.0	1323.0	III		2	30	80	
			SVTO	1321.0	1325.0	III		2	25	180	
			HOLL	1624.0	1630.0	III		2	25	178	
			SGMR	1625.0	1630.0	V		2	30	80	
			SVTO	1625.0	1632.0	III		2	25	180	
	0423	1151	ONDR	1626.0	1637.0	DCIM	G	1	800X	2000X	
			HOLL	1634.0	1659.0	II		1	25	91	ESS 0434
			SVTO	1635.0	1656.0	II		2	25	143	ESS 0254
			SGMR	1637.0	1700.0	II		2	30	80	ESS 0400
			PALE	1656.0	1714.0	II		1	25	36	ESS 0451
			SGMR	1754.0	1754.0	III		1	30	60	
			HOLL	2054.0	2127.0	III	N	1	25	146	
			PALE	2054.0	0407.0	III	N	1	25	66	
			SGMR	2054.0	2054.0	III		1	30	65	
	1927	2400	HIRA	2054.5	2055.0	III	B	1	25X	320	
			HIRA	2115.5	2120.0	III	G	1	25X	180	
			SGMR	2116.0	2118.0	III		1	30	70	
10			SVTO	0704.0	0705.0	III		1	25	69	
	0555	1205	IZMI	0704.7	0705.4	III	G	2	25X	70	
			LEAR	0728.0	0731.0	III		1	25	180	
			IZMI	0729.0	0731.3	III	G,C	2	25X	125	
			SVTO	0729.0	0731.0	V		2	25	81	
	0000	0959	HIRA	0729.0	0729.5	III	B	1	30	110	
			SVTO	0752.0	0755.0	V		1	25	61	
			IZMI	0753.0	0755.7	III	G,C	2	25X	95	
			IZMI	1036.6	1036.8	III	G	2	195	270X	
			IZMI	1050.5	1050.7	III	B	1	45	65	
			IZMI	1115.5	1119.7	I	GG	2	220	270X	
	0424	1750	ONDR	1356.5	1405.0	DCIM	G	2	800X	2000X	
			HOLL	1357.0	1402.0	III		2	25	159	
			SGMR	1357.0	1404.0	V		3	30	80	
			SVTO	1357.0	1402.0	III		2	25	180	
			SGMR	1402.0	1429.0	II		3	30	80	ESS 1030
			SVTO	1402.0	1429.0	II		2	25	180	ESS 1020
			HOLL	1803.0	1804.0	III		1	25	144	
			SGMR	1803.0	1804.0	III		2	30	80	
	1928	2400	HIRA								
11	0000	0056	HIRA								
	0534	0959	HIRA								
			IZMI	0621.0	0840.0	I	N	2	50	270X	
			SVTO	0621.0	0621.0	III		1	25	68	
	0600	1200	IZMI	0621.2	0621.5	III	G,C	1	45	90	
			SVTO	0648.0	0850.0	CONT		1	36	180	
			IZMI	0649.9	0651.0	III	GG	2	110	160	
			SVTO	0650.0	0650.0	III		1	25	59	
	0425	1750	ONDR	0651.0	0713.0	DCIM	G	1	800X	2000X	
			LEAR	0659.0	0913.0	CONT		1	46	180	
			IZMI	0701.3	0730.0U	III	S	2	45	160	
			IZMI	0707.5	0712.7	III	GG,C	2	45	270X	
			IZMI	0734.3	0735.0	III	G	2	45	160	
			IZMI	0737.4	0738.1	III	G	2	45	125	
			HOLL	1620.0	1621.0	III		1	26	72	
			SGMR	1621.0	1704.0	III	N	2	30	55	
			HOLL	1703.0	1704.0	III		1	25	87	
			SVTO	1703.0	1704.0	III		1	26	125	

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11	1928	2400	HIRA								
12	0426	1749	ONDR								
	0000	0959	HIRA	0544.0	0544.5	III	G	1	200	410	
	0555	1200	IZMI	0612.0U	0710.0U	I	N	1	80	180	
			IZMI	0615.1	0616.0	III	G	2	95	260	
			IZMI	0629.0	0632.2	III	GG,FS	2	45	260	
			IZMI	0734.8	0735.5	III	G	2	120	270X	
			IZMI	0855.3	0855.8	III	G	1	25X	90	
			IZMI	0916.1	0916.9	III	G	1	180	270X	
			IZMI	0950.6	0952.1	III	GG	2	125	270X	
			PALE	1906.0	1926.0	II		2	25	180	ESS 0659
			HOLL	1907.0	1923.0	II		1	37	180	ESS 0706
			SGMR	1907.0	1923.0	II		2	30	80	ESS 0600
			HOLL	1908.0	1945.0	III	N	1	25	180	
	1928	2400	HIRA								
			HOLL	2329.0	2329.0	III		1	25	84	
			LEAR	2329.0	2329.0	III		1	25	114	
13	0426	1748	ONDR								
	0600	1200	IZMI	0706.2	0706.4	III	G	2	110	270X	
			LEAR	0810.0	0815.0	III		1	44	180	
			IZMI	0810.3	0812.7	III	GG,FS	2	40	270X	
	0000	0958	HIRA	0810.5	0813.0	III	G	1	80	300	
			SVTO	0811.0	0812.0	III		1	39	180	
			IZMI	0815.4	0815.5	III	G	2	50	120	
			IZMI	0822.5	0828.7	III	GG	2	110	270X	
			IZMI	0831.1	0831.2	III	G	2	85	270X	
			LEAR	0833.0	0833.0	III		1	74	180	
			IZMI	0833.4	0833.6	III	G	2	110	270X	
			IZMI	0859.6	0900.5	III	G	2	185	270X	
			IZMI	0925.9	0928.0	III	G	1	200	270X	
			IZMI	0935.9	0936.2	III	G	1	125	270X	
			IZMI	0942.3	0942.5	III	B	1	100	250	
			IZMI	1043.6	1044.4	III	GG	1	200	270X	
			SVTO	1058.0	1059.0	III		1	25	136	
			IZMI	1058.3	1059.2	III	GG,C	2	25X	95	
			HOLL	1619.0	1620.0	III		1	25	95	
			SVTO	1619.0	1620.0	III		1	31	147	
14	0427	1748	ONDR								
	0555	1200	IZMI	0631.4	0631.6	III	G	1	210	270X	
			IZMI	0642.6	0642.7	III	B	2	45	160	
	0020	0710	CULG	0643.0	0643.0	III	B	1	30	140	
			IZMI	0705.4	0706.3	III	G,C	1	25X	85	
			CULG	0706.0	0706.0	III	G	1	27	80	
			IZMI	0955.6	0955.7	III	B,HARM	1	30	65	
			IZMI	1120.8	1123.0	III	GG,C	2	25X	170	
			SGMR	1121.0	1129.0	III		3	30	80	
			SVTO	1121.0	1133.0	III	N	2	25	180	
			IZMI	1126.1	1126.6	III	G,C	2	30	170	
			IZMI	1127.6	1129.5	III	GG,C	2	25X	270X	
			IZMI	1129.0	1129.8	V		2	45	70	
			SVTO	1218.0	1218.0	III		1	25	180	
			SVTO	1439.0	1514.0	III	N	2	25	82	
			HOLL	1440.0	1449.0	III		1	25	87	
			SGMR	1440.0	1514.0	III	N	3	30	80	
			HOLL	1504.0	1705.0	III	N	1	25	180	
			SGMR	1618.0	1629.0	III	N	1	30	50	
			SVTO	1618.0	1629.0	III	N	1	25	127	
			PALE	1629.0	1645.0	III	N	1	25	85	
			HOLL	1754.0	1905.0	III	N	1	25	141	
			SGMR	1812.0	1837.0	III	N	2	30	80	
			HOLL	1919.0	1919.0	III		1	75	180	
			HOLL	1930.0	1930.0	III		1	25	83	
			SGMR	1930.0	1931.0	III		1	30	80	
			HOLL	2022.0	2023.0	III		1	25	163	
			SGMR	2022.0	2023.0	III		2	30	80	
			HOLL	2101.0	2101.0	III		1	25	125	

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14	2110	2325	CULG	2136.0	2141.0	III	G	1	40	200	
			CULG	2203.0	2207.0	III	G	1	25	160	
			CULG	2216.0	2216.0	III	B	1	27	90	
15	0020	0710	CULG	0028.0	0029.0	III	G	1	20	160	
			HOLL	0033.0	0034.0	III		1	25	133	
			LEAR	0033.0	0040.0	III		1	25	180	
			PALE	0033.0	0035.0	III		1	25	180	
			CULG	0034.0	0035.0	III	G	2	20	150	
			CULG	0040.0	0041.0	III	G	1	35	150	
			CULG	0131.0	0131.0	III	G	1	35	180	
			CULG	0200.0	0203.0	III	G	1	23	180	
			LEAR	0208.0	0215.0	III		1	25	180	
			CULG	0209.0	0212.0	III	G	3	18X	180	
			PALE	0210.0	0210.0	III		1	25	180	
			CULG	0215.0	0215.0	III	B	1	57	290	
			CULG	0257.0	0259.0	III	G	1	40	180	
			CULG	0320.0	0320.0	III	B	1	60	260	
			CULG	0359.0	0440.0	III	N	1	35	180	
	0428	1747	ONDR								
			CULG	0628.0	0630.0	III	G	1	30	160	
	0600	1204	IZMI	0628.8	0630.0	III	GG,FS	1	50	95	
			IZMI	0722.6	0722.7	III	B	1	55	65	
			SVTO	0725.0	0725.0	III		1	45	180	
			IZMI	0725.7	0725.9	III	G,C	2	45	270X	
			IZMI	0736.3	0737.5	III	GG,FS	1	45	95	
			IZMI	0829.2	0830.7	III	GG,FS	2	45	195	
			IZMI	0916.3	0916.4	III	B	1	120	250	
			IZMI	0919.6	0919.7	III	B	1	45	65	
			SVTO	0928.0	0934.0	III		1	40	165	
			IZMI	0928.1	0929.3	III	GG,FS,C	2	35	255	
			IZMI	0933.3	0934.7	III	GG,FS	2	45	180	
			IZMI	0958.6	0958.9	III	G,FS	2	40	170	
			IZMI	1011.1	1011.2	III	B	1	120	175	
			IZMI	1036.3	1037.3	III	G	1	55	95	
			IZMI	1038.3	1039.1	III	GG,FS	1	45	160	
			IZMI	1157.4	1157.9	III	G	1	55	65	
			IZMI	1159.2	1203.7	III	GG,FS	2	45	95	
			HOLL	1440.0	1440.0	III		1	25	74	
			SVTO	1529.0	1529.0	III		1	70	152	
			SGMR	1959.0	2005.0	III		1	30	60	
	2110	2400	CULG	2224.0	2224.0	III	B	1	20	200	
			CULG	2319.0	2320.0	III	G	1	60	180	
16	0000	0710	CULG								
	0429	1747	ONDR								
			IZMI	1018.1	1018.2	III	G	1	200	270X	
	0555	1202	IZMI	1018.2	1018.2	III	G	1	180	265	
			IZMI	1021.4	1021.5	III	B	1	200	270X	
			IZMI	1030.9	1030.9	III	B	1	245	270X	
	2110	2400	CULG	2238.0	2238.0	III	G	1	20	150	
			CULG	2249.0	2251.0	III	G	1	20	150	
			CULG	2254.0	2400.0D	I	S	1	100	180	
17	0000	0710	CULG	0000.0E	0015.0	I	S	1	100	160	
			CULG	0036.0	0038.0	III	G	2	50U	180	
			LEAR	0037.0	0037.0	III		1	61	133	
			CULG	0115.0	0153.0	III	N	1	50U	180	
			LEAR	0123.0	0124.0	III		1	56	180	
	0113	0956	HIRA	0123.5	0124.0	III	G	1	90	270	
			CULG	0124.0	0124.0	III	G	2	40U	250	
			HIRA	0149.0	0158.5	III	G	2	30	390	
			LEAR	0149.0	0158.0	III		1	30	180	
			CULG	0157.0	0159.0	III	G	3	40U	400	
			LEAR	0247.0	0248.0	III		1	55	180	
			HIRA	0248.0	0249.0	III	G	1	80	220	
			CULG	0335.0	0353.0	III	N	1	50U	180	
			CULG	0455.0	0457.0	III	G	1	60	300	
			LEAR	0455.0	0456.0	III		1	73	180	

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17			SVTO	0455.0	1756.0	III	N	1	50	180	
			SVTO	0455.0	1756.0	III	N	2	25	180	
			HIRA	0456.0	0457.0	III	G	1	80	360	
			CULG	0502.0	0510.0	III	G	1	60	180	
			LEAR	0508.0	0512.0	III		1	74	180	
			CULG	0511.0	0512.0	III	G	2	60	200	
			HIRA	0511.5	0512.5	III	G	2	80	220	
			CULG	0544.0	0545.0	III	G	1	100	180	
			CULG	0554.0	0554.0	III	B	1	25	180	
			LEAR	0607.0	0617.0	III		1	25	178	
	0600	1200	IZMI	0607.7	0610.4	III	GG,FS	2	35	270X	
			CULG	0608.0	0639.0	III	N	1	27	650	
			IZMI	0612.4	0613.0	III	G	1	120	160	
			IZMI	0616.5	0617.6	III	G	2	35	270X	
			HIRA	0617.0	0617.5	III	B	1	90	250	
			IZMI	0626.7	0627.6	III	G	1	110	260	
			IZMI	0638.2	0638.6	III	G	1	85	130	
			IZMI	0718.0	0718.4	III	G	2	95	260	
			IZMI	0721.4	0721.6	III	G	1	130	190	
			HIRA	0744.0	0747.0	III	G	1	90	190	
			IZMI	0744.0	0744.8	III	GG,C	2	45	160	
			LEAR	0744.0	0746.0	III		1	87	180	
			IZMI	0746.7	0747.1	III	G	2	115	270X	
			IZMI	0750.4	0750.5	III	B	1	120	150	
			IZMI	0755.1	0801.0	III	GG	1	45	160	
			IZMI	0758.0U	1055.0U	I	N	1	120	160	
			ONDR	0816.5	0824.4	DCIM	GG	2	800X	2000X	
			HIRA	0817.0	0822.0	III	G	3	25X	500	
			LEAR	0817.0	0822.0	III		2	25	180	
			LEAR	0817.0	0829.0	II		2	25	180	ESS 0988
			SVTO	0817.0	0821.0	III		2	25	180	
			IZMI	0817.2	0822.3	III	GG,C,FS	2	25X	270X	
	0430	1746	ONDR	0818.4	0823.3	DCIM	G	2	2000X	4500X	
			IZMI	0820.3	0823.7	UNCLF	DS	2	25X	45	
			IZMI	0822.6	0824.8	III	GG,C	2	40	240	
			IZMI	0822.8	0836.5U	II	G,HARM	2	25X	160	
			HIRA	0823.0	0836.0	II		3	25X	200	
			SVTO	0826.0	0843.0	II		3	25	180	ESS 1035
			LEAR	0830.0	0845.0	IV		2	25	164	
			IZMI	0834.3	0846.0	IV		2	45U	250	
			IZMI	0834.3	0847.0	III	GG	1	25X	160	
			IZMI	0838.6	0838.7	III	B	2	95	180	
			IZMI	0841.6	0841.7	III	B	2	90	180	
			IZMI	0903.7	0907.8	III	GG	1	110	210	
			ONDR	0907.3	0910.3	DCIM	G	1	828	2000X	
			HIRA	0937.5	0942.0	III	G	1	25X	270	
			IZMI	0937.5	0947.1	III	GG	2	25X	270X	
			ONDR	0939.4	0941.4	DCIM	G	1	800X	2000X	
			IZMI	0940.9	0943.6	III	G,C,FS	2	25X	190	
			SVTO	0941.0	0943.0	III		2	25	180	
			IZMI	1002.9	1004.0	III	G	2	55	190	
			IZMI	1035.1	1035.6	III	G,C	2	110	240	
			SVTO	1038.0	1040.0	III		1	25	180	
			IZMI	1038.1	1041.5	III	GG	2	25X	270X	
			IZMI	1046.2	1051.8	III	GG	1	45	90	
			IZMI	1101.8	1104.0	III	G,C	2	25X	270X	
			SGMR	1149.0	1207.0	III	N	1	30	60	
			IZMI	1149.2	1151.7	III	GG	2	25X	160	
			IZMI	1155.3	1155.9	III	G	1	45	65	
			HOLL	1338.0	1408.0	III	N	1	25	180	
			SGMR	1338.0	1347.0	III		2	30	80	
			ONDR	1346.2	1346.5	DCIM	GG	2	800X	1297	
			HOLL	1532.0	1532.0	V		1	25	180	
			SGMR	1532.0	1532.0	III		3	30	80	
			ONDR	1533.1	1533.2	DCIM	G	2	1175	1695	
			HOLL	1752.0	1756.0	III		1	25	180	
			PALE	1752.0	1755.0	III		1	25	180	
			SGMR	1752.0	1755.0	III		2	30	60	
			HOLL	1816.0	1818.0	III		1	25	144	

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17			PALE	1816.0	1818.0	III		1	25	125	
			SGMR	1816.0	1818.0	III		1	30	60	
			HOLL	1830.0	1836.0	II		1	25	56	ESS 0762
			PALE	1831.0	1835.0	III		1	25	61	
			SGMR	1831.0	1836.0	II		2	30	55	ESS 0790
	1930	2400	HIRA	2044.0	2044.5	III	B	3	50	600	
	2110	2400	CULG	2110.0E	2207.0	I	S	1	100	180	
			CULG	2151.0	2236.0	III	N	1	20	80	
			CULG	2244.0	2252.0	III	GG	2	20	160	
			HIRA	2244.0	2248.0	III	G	1	25X	140	
			HOLL	2244.0	2252.0	III		1	25	140	
			PALE	2244.0	2252.0	III		1	25	94	
			CULG	2355.0	2358.0	III	G	1	60	180	
18	0000	0710	CULG	0042.0	0606.0	I	S	1	100	180	
			CULG	0451.0	0543.0	III	N	1	25	100	
			LEAR	0534.0	0536.0	III		2	25	180	
			SVTO	0534.0	0535.0	III		1	25	180	
	0000	0956	HIRA	0534.0	0537.5	III	G	1	30	410	
			CULG	0535.0	0537.0	III	G	3	18X	450	
			CULG	0644.0	0645.0	III	G	2	25	180	
			HIRA	0644.0	0644.5	III	B	1	30	130	
			LEAR	0644.0	0644.0	III		1	25	180	
			SVTO	0644.0	0644.0	III		1	25	84	
	0555	1202	IZMI	0644.1	0645.4	III	GG	2	25X	180	
			IZMI	0647.7	0648.3	III	G	1	110	160	
			CULG	0648.0	0659.0	III	GG	1	60	160	
			HIRA	0739.5	0740.0	III	B	1	50	130	
			IZMI	0739.8	0740.4	III	G,C	2	55	170	
			SVTO	0740.0	0740.0	III		1	25U	82U	
			IZMI	0832.3	0833.9	III	GG	1	45	120	
			IZMI	0838.4	0839.2	III	G	1	80	150	
			IZMI	0852.5	0852.6	III	G	1	45	90	
			IZMI	1016.5	1021.0	III	N	1	55	160	
			IZMI	1033.0U	1202.0D	I	S	2	80	270X	
			IZMI	1034.4	1052.4	III	N	1	55	95	
			IZMI	1109.2	1111.8	III	G	2	50	135	
			IZMI	1120.0	1120.1	III	B	1	50	140	
			IZMI	1134.8	1140.4	III	GG	1	50	95	
			IZMI	1141.5	1141.9	III	GG	2	140	270X	
			IZMI	1145.6	1148.7	III	N	1	111	160	
	0431	1745	ONDR	1523.0	1523.5	DCIM	G	2	903	1480	
			HOLL	1551.0	1552.0	III		1	25	87	
			SGMR	1552.0	1552.0	III		1	30	60	
			SVTO	1552.0	1552.0	III		1	25	82	
	1931	2400	HIRA								
	2110	2400	CULG	2110.0E	2159.0	I	S	1	130	180	
19	0000	0710	CULG	0018.0	0445.0	I	S	1	80	180	
			CULG	0124.0	0124.0	III	B	2	35	90	
			LEAR	0124.0	0124.0	III		1	25	117	
	0000	0144	HIRA	0124.5	0125.0	III	B	1	30	110	
			LEAR	0126.0	0445.0	CONT		1	75	180	
			CULG	0134.0	0438.0	III	N	1	30U	180	
			LEAR	0138.0	0144.0	II		2	34	105	ESS 0434
			CULG	0139.0	0144.0	II	SH	2	60	100	ESS 500
			PALE	0139.0	0144.0	II		1	33	90	ESS 0558
			CULG	0140.0	0144.0	II	FN	1	35	50	
			LEAR	0318.0	0329.0	III		1	25	107	
			PALE	0319.0	0328.0	III		1	25	70	
			CULG	0325.0	0326.0	III	G	2	50	80	
	0432	1744	ONDR								
			CULG	0451.0	0451.0	III	B	1	50U	300	
			CULG	0529.0	0529.0	III	G	1	25	160	
			CULG	0611.0	0710.0D	I	S	1	120	180	
	0618	1200	IZMI	0618.0E	1030.0U	I	N	1	110	270X	
			IZMI	0620.3	0620.5	III	G,U	1	220	270X	
			IZMI	0620.4	0620.5	III	G	1	110	160	
			IZMI	0653.2	0653.3	III	B	1	55	95	

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19			SVTO	0740.0	0741.0	III		1	38	82	
			IZMI	0740.5	0741.3	III	G,C	2	40	270X	
			SVTO	0820.0	0915.0	CONT		1	114	180	
			IZMI	0830.3	0835.7	I	GG,DC	2	115	160	
			IZMI	1027.7	1027.8	III	B	1	200	265	
			HOLL	1421.0	1422.0	III		1	25	180	
			SGMR	1422.0	1422.0	III		3	30	80	
			SVTO	1422.0	1422.0	III		2	25	180	
			HOLL	1522.0	1526.0	III		1	25	141	
			SGMR	1522.0	1523.0	III		1	30	55	
			SVTO	1522.0	1523.0	III		1	25U	150U	
			CULG	2110.0E	2221.0	III	S,C	1	50U	130	
	2110	2400	CULG	2110.0E	2400.0D	I	S,C	1	70	180	
			LEAR	2311.0	0917.0	CONT		1	77	180	
20	0000	0710	CULG	0000.0E	0710.0D	I	S,C	1	100	180	
			LEAR	0212.0	0212.0	III		1	25	45	
			CULG	0321.0	0710.0D	III	N	1	20	100	
			SVTO	0405.0	1754.0	CONT		1	110	180	
	0433	1743	ONDR								
	0558	0954	HIRA								
	0600	1200	IZMI	0600.0E	1200.0D	I	S,C	2	80	270X	
			IZMI	0809.0	0809.1	III	B	1	45	155	
			IZMI	0812.9	0813.0	III	B	1	55	85	
			IZMI	0955.7	0955.8	III	G	1	30	130	
			IZMI	0959.6	0959.7	III	B	1	50	90	
			IZMI	1048.8	1049.2	III	G	1	110	260	
			IZMI	1115.2	1115.3	UNCLF	FS	2	50	65	
			IZMI	1124.0	1200.0D	III	N,FS	1	45	95	
			IZMI	1138.1	1138.6	III	G,FS	2	25X	140	
			SVTO	1146.0	1148.0	III		1	25	84	
			IZMI	1146.1	1154.0	III	S,FS	2	25X	170	
			IZMI	1146.6	1148.4	III	G	2	25X	170	
			SGMR	1147.0	1148.0	III		1	30	55	
			SVTO	1216.0	1754.0	III	N	1	25	180	
			HOLL	1418.0	1418.0	III		1	25	77	
			HOLL	1518.0	1829.0	III	N	1	25	93	
	1933	2400	HIRA								
			HOLL	2039.0	2251.0	III	N	1	25	180	
	2110	2400	CULG	2110.0E	2400.0D	I	S,C	1	80	180	
			CULG	2124.0	2400.0D	III	N	1	20	180	
			LEAR	2342.0	0917.0	CONT		1	75	180	
21			CULG	0000.0E	0710.0D	III	N	1	20	100	
	0000	0710	CULG	0000.0E	0710.0D	I	S,C	1	60	180	
			LEAR	0129.0	0129.0	III		1	25	180	
	0000	0953	HIRA	0129.0	0129.5	III	B	1	25X	60	
			SVTO	0400.0	1753.0	CONT		1	75	180	
			LEAR	0456.0	0917.0	III	N	1	25	180	
			CULG	0508.0	0508.0	III	B	3	70	300	
			HIRA	0508.0	0509.0	III	B	2	80	220	
			LEAR	0508.0	0508.0	III		1	72	180	
			SVTO	0508.0	0508.0	III		1	66	180	
			IZMI	0550. E	1206.0D	III	N	2	25X	270X	
			IZMI	0550.0E	1206.0D	I	S,C,DC	2	45U	270X	
			IZMI	0608.8	0610.7	III	GG	2	40	270X	
			SVTO	0609.0	0714.0	III	N	2	25	180	
			HIRA	0609.5	0610.0	III	B	2	120	230	
			CULG	0610.0	0610.0	III	B	3	70	300	
			IZMI	0618.3	0624.1	III	GG,C	2	45	270X	
			CULG	0619.0	0622.0	III	G	3	50U	400	
			HIRA	0619.0	0622.0	III	G	2	60	430	
			LEAR	0619.0	0620.0	III		1	45	180	
			IZMI	0626.3	0627.0	III	GG,C	2	50	270X	
			HIRA	0626.5	0627.0	III	B	1	70	310	
			CULG	0627.0	0627.0	III	B	3	40U	360	
			IZMI	0714.3	0714.5	III	G	2	25X	95	
			IZMI	0725.7	0733.8	III	GG	2	45	95	
	0434	1742	ONDR	0750.0	0750.1	DCIM	G	2	800X	1133	

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21			IZMI	0812.0	0812.5	III	G	2	25X	160	
			SVTO	0815.0	0819.0	III		2	25	180	
			HIRA	0815.5	0819.5	III	G	1	25X	320	
			IZMI	0815.8	0816.6	III	G,C	2	25X	190	
			IZMI	0815.9	0816.4	V		2	25X	65	
			IZMI	0817.0	0819.7	III	GG	2	25X	270X	
			IZMI	0927.4	0927.8	III	G	2	40	160	
			IZMI	0956.9	1010.6	III	GG	2	25X	160	
			SVTO	1057.0	1057.0	III		1	25	135	
			IZMI	1057.2	1057.6	III	B	2	25X	160	
			IZMI	1110.7	1116.2	III	GG	2	25X	160	
			SGMR	1333.0	1333.0	III		2	30	55	
			SVTO	1333.0	1333.0	III		1	25	83	
			HOLL	1412.0	1418.0	III		1	25	180	
			SGMR	1414.0	1418.0	III		2	30	80	
			SVTO	1415.0	1417.0	III		2	25	180	
			SVTO	1450.0	1450.0	III		1	25	164	
			HOLL	1517.0	1900.0	III	N	1	25	180	
			SGMR	1724.0	1730.0	III		1	30	55	
			PALE	1813.0	1814.0	III		1	25	180	
			SGMR	1813.0	1814.0	III		3	30	80	
			HOLL	2000.0	2002.0	III		1	25	134	
			PALE	2010.0	2011.0	III		1	25	74	
	1934	2400	HIRA	2010.5	2011.0	III	B	1	25X	120	
			CULG	2100.0E	2400.0D	III	N	1	20	100	
	2100	2400	CULG	2100.0E	2400.0D	I	S,C	1	70	200	
			HOLL	2212.0	2300.0	III	N	1	25	131	
			CULG	2225.0	2226.0	III	G	1	40	140	
			HIRA	2225.5	2226.0	III	B	1	50	120	
			HIRA	2231.5	2233.0	III	G	2	60	300	
			CULG	2232.0	2233.0	III	G	1	40	360	
			SGMR	2233.0	2252.0	III	N	1	30	50	
			HOLL	2310.0	0030.0	III	N	1	25	134	
			HIRA	2325.0	2325.5	III	B	1	25X	50	
			PALE	2325.0	2325.0	III		1	25	180	
22			CULG	0000.0E	0710.0D	III	N	1	30	120	
	0000	0710	CULG	0000.0E	0710.0D	I	S,C	2	60	180	
			LEAR	0033.0	0918.0	CONT		1	74	180	
			CULG	0159.0	0201.0	III	G	3	18X	820	
			LEAR	0159.0	0201.0	V		1	25	180	
			PALE	0159.0	0201.0	V		2	25	180	
	0000	0952	HIRA	0159.5	0201.0	III	G	2	25X	60	
			CULG	0353.0	0358.0	III	G	1	18X	130	
			HIRA	0354.5	0356.0	III	G	1	25X	70	
			SVTO	0400.0	1752.0	CONT		1	25	180	
			IZMI	0600.0E	1200.0D	III	N	1	45U	95U	
	0600	1200	IZMI	0600.0E	1200.0D	I	S,C	2	50U	270X	
	0435	1741	ONDR	0818.5	0819.1	DCIM	GG	1	1353	1616	
	1935	2400	HIRA								
			CULG	2100.0E	2254.0	III	N	1	20	100	
	2100	2400	CULG	2100.0E	2350.0	I	S	1	60	180	
			HOLL	2143.0	0100.0	CONT		1	37	136	
23	0000	0710	CULG	0034.0	0034.0	III	B	2	40U	140	
	0000	0951	HIRA	0034.0	0034.5	III	B	1	25X	100	
			CULG	0049.0	0128.0	I	S	1	140	180	
			HIRA	0136.0	0141.5	III	G	1	100	460	
			CULG	0137.0	0141.0	III	G	2	50U	470	
			CULG	0351.0	0620.0	III	N	1	60	180	
			HIRA	0412.5	0413.0	III	B	1	320	460	
			CULG	0413.0	0413.0	III	B	1	350	470	
			HIRA	0417.0	0417.5	III	B	1	120	220	
	0436	1740	ONDR								
			CULG	0442.0	0710.0D	I	S	1	140	200	
			SVTO	0450.0	0801.0	CONT		1	53	180	
			SVTO	0532.0	0533.0	III		1	43	180	
			CULG	0533.0	0534.0	III	G	2	35	180	
			LEAR	0533.0	0534.0	III		1	25	180	

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23			HIRA	0533.5	0534.0	III	B	2	50	230	
	0600	1200	IZMI	0600.0E	1200.0D	I	N	2	120	270X	
			IZMI	0610.6	0610.6	III	G	1	160	205	
			IZMI	0614.3	0615.3	III	G	2	110	240	
			IZMI	0719.4	0719.8	III	G	2	115	270X	
			IZMI	0740.1	0740.4	III	G	2	55	270X	
			IZMI	0749.0	0750.0	III	G	2	25X	175	
			SVTO	0749.0	0750.0	III		1	25	77	
			HIRA	0749.5	0750.0	III	B	1	60	130	
			IZMI	0838.6	0839.6	III	GG	2	185	270X	
			IZMI	0926.1	0926.3	III	G	1	200	270X	
			IZMI	0942.0	0942.5	III	G	2	115	270X	
			IZMI	0956.6	0957.2	III	G	1	55	155	
			SVTO	1001.0	1752.0	CONT		1	72	180	
	1936	2400	HIRA								
	2100	2400	CULG	2224.0	2226.0	III	G	2	23	180	
			CULG	2315.0	2315.0	III	B	1	60	180	
			HOLL	2338.0	2338.0	III		1	25	83	
24	0000	0951	HIRA								
	0000	0710	CULG	0125.0	0710.0D	I	S	1	100	180	
			LEAR	0135.0	0919.0	CONT		1	88	180	
			LEAR	0242.0	0251.0	II		1	31	60	ESS 0500
			PALE	0242.0	0251.0	II		1	25	28	ESS 0479
			CULG	0243.0	0250.0	II	FN	1	27	50	
			CULG	0243.0	0252.0	II	SH	3	50U	100	ESS 500
			SVTO	0425.0	0637.0	CONT		1	75	180	
	0437	1739	ONDR								
			CULG	0445.0	0445.0	III	B	1	25	130	
	0550	1202	IZMI	0550.0E	1202.0D	I	N	2	110U	270X	
			CULG	0609.0	0609.0	III	B	1	40U	140	
			IZMI	0619.3	0920.8	I	GG,DC	2	205	250	
			IZMI	0630.4	0631.1	I	GG	2	195	215	
	1937	2400	HIRA								
	2100	2400	CULG	2100.0E	2400.0D	I	S	1	60	160	
			CULG	2113.0	2147.0	III	N	1	30	180	
25	0000	0950	HIRA								
	0000	0710	CULG	0000.0E	0635.0	I	S	1	100	180	
	0438	1738	ONDR								
	0555	1200	IZMI	0555.0E	1010.0U	I	N	1	110	250	
			IZMI	1010.0	1200.0D	I	S	1	110	240	
	1938	2400	HIRA								
	2100	2400	CULG	2335.0	2335.0	III	B	1	60	150	
26			LEAR	0035.0	0036.0	III		1	25	180	
	0000	0950	HIRA	0035.5	0036.0	III	B	1	60	120	
	0000	0710	CULG	0036.0	0036.0	III	G	2	57	180	
			CULG	0130.0	0130.0	III	B	1	20	120	
			CULG	0155.0	0200.0	III	G	2	60	180	
			CULG	0245.0	0246.0	III	G	2	60	150	
			CULG	0301.0	0301.0	III	G	1	60	150	
			CULG	0326.0	0336.0	III	G	2	25	180	
			LEAR	0326.0	0920.0	III	N	1	25	180	
			CULG	0328.0	0328.0	III	B	3	25	180	
	0439	1737	ONDR								
			CULG	0458.0	0458.0	III	B	2	60	180	
			CULG	0506.0	0507.0	III	G	2	70	180	
			SVTO	0506.0	1131.0	III	N	1	25	180	
			CULG	0558.0	0604.0	III	G	1	50	150	
	0555	1200	IZMI	0600.7	0601.3	III	G	1	55	85	
			CULG	0629.0	0635.0	III	G	1	60	150	
			IZMI	0629.4	0632.2	III	GG	2	55	170	
			CULG	0630.0	0630.0	III	B	2	60	150	
			IZMI	0729.4	0730.7	III	G	2	60	150	
			IZMI	0813.1	0813.7	III	G	1	55	95	
			IZMI	0917.6	0917.8	III	B	1	55	90	
			IZMI	0929.0	0930.5	III	G	2	50	95	
			IZMI	0936.7	0938.0	III	GG	2	50	170	

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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
26			IZMI	0943.1	0943.4	III	G,U	2	55	175	
			IZMI	0947.3	0950.6	III	GG	2	50	190	
			IZMI	0952.4	0954.0	III	G	1	45	85	
			SGMR	1115.0	1115.0	III		2	30	55	
			IZMI	1115.2	1116.0	III	G,C	2	25X	170	
			IZMI	1116.0	1116.9	III	G,C	2	25X	170	
			HOLL	1836.0	2001.0	III	N	1	25	180	
			PALE	1836.0	2005.0	III	N	1	25	180	
			SGMR	1836.0	1912.0	III	N	2	30	80	
	1939	2400	HIRA								
	2100	2400	CULG	2152.0	2153.0	III	G	1	18	57	
			CULG	2253.0	2259.0	III	G	2	20	140	
27	0000	0710	CULG	0024.0	0050.0	III	N	1	20	150	
			HOLL	0029.0	0029.0	III		1	25	78	
	0000	0949	HIRA	0029.0	0029.5	III	B	1	25X	70	
			HOLL	0044.0	0046.0	III		1	25	74	
			HIRA	0044.5	0046.5	III	G	1	25X	60	
	0555	1200	IZMI								
	0440	1736	ONDR	1249.3	1250.0	DCIM	GG	2	800X	2000X	
			HOLL	1722.0	1822.0	III	N	1	25	141	
			PALE	1722.0	1723.0	III		1	25	100	
			SGMR	1722.0	1723.0	III		2	30	75	
			SVTO	1722.0	1722.0	III		1	25	150	
			HOLL	2326.0	2326.0	III		1	25	104	
			PALE	2326.0	2327.0	III		1	25	57	
	1940	2400	HIRA	2326.5	2327.0	III	B	1	25X	130	
	2100	2400	CULG	2327.0	2328.0	III	G	2	30	180	
28	0000	0700	CULG	0030.0	0030.0	III	B	1	50U	160	
	0441	1735	ONDR								
			CULG	0524.0	0525.0	III	G	1	23	120	
			SVTO	0524.0	0525.0	III		1	25	74	
	0000	0948	HIRA	0524.5	0525.0	III	B	1	25X	70	
			CULG	0614.0	0620.0	III	G	1	20	80	
			SVTO	0614.0	0618.0	III		1	25	68	
	0555	1200	IZMI	0614.0	0619.6	III	G	2	30	95	
			LEAR	0617.0	0618.0	III		1	25	67	
			HIRA	0617.5	0618.0	III	B	1	30	50	
			CULG	0631.0	0631.0	III	B	1	27	75	
			IZMI	0631.2	0631.5	III	B	1	50	95	
			SVTO	0801.0	0802.0	III		1	28U	56U	
			IZMI	0801.1	0802.3	III	G	1	30	90	
			LEAR	0848.0	0849.0	III		1	25	106	
			SVTO	0848.0	0849.0	III		1	28U	81U	
			HIRA	0848.5	0849.0	III	B	1	40	110	
			IZMI	0848.9	0849.1	III	G,HARM	2	25X	130	
			SVTO	1107.0	1112.0	V		2	25	170	
			IZMI	1107.1	1110.8	III	GG,C	2	25X	172	
			SGMR	1108.0	1112.0	V		2	30	80	
			IZMI	1108.9	1110.3	V		2	25X	85	
			IZMI	1111.3	1112.6	III	G,C	2	25X	270X	
	1941	2400	HIRA								
	2100	2400	CULG								
29	0000	0710	CULG								
	0000	0947	HIRA								
	0443	1734	ONDR								
	0600	1200	IZMI	0710.8	0710.9	III	B	1	45	155	
			IZMI	0715.7	0715.8	III	B	1	45	85	
	1941	2400	HIRA								
	2100	2400	CULG								
30	0000	0710	CULG								
	0000	0947	HIRA								
	0443	1732	ONDR								
	0555	1202	IZMI								
	1942	2400	HIRA								
	2100	2400	CULG	2223.0	2225.0	III	G	1	60	180	

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

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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
31	0000	0946	HIRA								
	0000	0710	CULG	0103.0	0104.0	III	G	2	57U	180	
	0445	1731	ONDR								
			CULG	0521.0	0532.0	III	N	1	27	180	
			CULG	0659.0	0659.0	III	B	1	50U	90	
	0555	1200	IZMI	0659.2	0659.4	III	G,C	1	50	85	
			IZMI	1116.1	1116.2	III	G	1	110U	175	
			HOLL	1724.0	1726.0	III		1	25	75	
			SGMR	1724.0	1726.0	III		1	30	50	
	2100	2400	CULG	2315.0	2320.0	III	G	2	18	180	
	1942	2400	HIRA	2318.5	2319.0	III	B	1	25X	200	

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 BLEN = Bleien
PALE = Palehua POTS = Potsdam SGMR = Sagamore Hill SVTO = San Vito

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