

A new nomenclature for spheroidal modes

E.A. Okal

The following tables present a list of all spheroidal modes with period greater than 45 seconds and angular order less than 151.

Tables 1 to 4 give a correspondence between the conventional nomenclature and the new one proposed by Okal [1977], for K, C, V, and R modes. Table 5 gives a list of H modes.

The conventional nomenclature is taken as resulting from Gilbert and Dziewonski's [1975] model 1066A.

References :

Gilbert and Dziewonski, 1975 : An application of normal mode theory to the retrieval of structural parameters and source mechanisms from seismic spectra. Phil. Trans. Roy. Soc. London, 278A, 187-269.

Okal, 1977 : A Physical Classification of the Earth's Spheroidal Modes. Journal of Physics of the Earth, 25, in press.

Table 1

IDENTIFICATION OF K MODES

OK 16	2S 16	OK 65	5S 65	1K 12	6S 12	2K 1	5S 1
OK 17	2S 17	OK 66	5S 66	1K 13	7S 13	2K 2	6S 2
OK 18	2S 18	OK 67	6S 67	1K 14	7S 14	2K 3	7S 3
OK 19	2S 19	OK 68	6S 68	1K 15	7S 15	2K 4	8S 4
OK 20	2S 20	OK 69	6S 69	1K 16	8S 16	2K 5	9S 5
OK 21	2S 21	OK 70	6S 70	1K 17	8S 17	2K 6	10S 6
OK 22	2S 22	OK 71	6S 71	1K 18	8S 18	2K 7	10S 7
OK 23	2S 23	OK 72	6S 72	1K 19	8S 19	2K 8	11S 8
OK 24	2S 24	OK 73	6S 73	1K 20	9S 20	2K 9	12S 9
OK 25	2S 25	OK 74	6S 74	1K 21	9S 21	2K 10	13S 10
OK 26	3S 26	OK 75	6S 75	1K 22	9S 22	2K 11	13S 11
OK 27	3S 27	OK 76	6S 76	1K 23	10S 23	2K 12	14S 12
OK 28	3S 28	OK 77	6S 77	1K 24	10S 24	2K 13	15S 13
OK 29	3S 29	OK 78	6S 78	1K 25	11S 25	2K 14	16S 14
OK 30	3S 30	OK 79	6S 79	1K 26	11S 26	2K 15	16S 15
OK 31	3S 31	OK 80	7S 80	1K 27	12S 27	2K 16	17S 16
OK 32	3S 32	OK 81	7S 81	1K 28	12S 28	2K 17	17S 17
OK 33	3S 33	OK 82	7S 82	1K 29	12S 29	2K 18	18S 18
OK 34	3S 34	OK 83	7S 83	1K 30	12S 30	2K 19	19S 19
OK 35	3S 35	OK 84	7S 84	1K 31	13S 31	2K 20	19S 20
OK 36	3S 36	OK 85	7S 85	1K 32	13S 32	2K 21	20S 21
OK 37	3S 37	OK 86	7S 86	1K 33	13S 33	2K 22	21S 22
OK 38	3S 38	OK 87	7S 87	1K 34	14S 34	2K 23	21S 23
OK 39	3S 39	OK 88	7S 88	1K 35	14S 35	2K 24	22S 24
OK 40	3S 40	OK 89	7S 89	1K 36	14S 36	2K 25	22S 25
OK 41	4S 41	OK 90	7S 90	1K 37	15S 37	2K 26	23S 26
OK 42	4S 42	OK 91	7S 91	1K 38	15S 38	2K 27	23S 27
OK 43	4S 43	OK 92	7S 92	1K 39	15S 39	2K 28	24S 28
OK 44	4S 44	OK 93	8S 93	1K 40	16S 40	2K 29	25S 29
OK 45	4S 45	OK 94	8S 94	1K 41	16S 41	2K 30	25S 30
OK 46	4S 46	OK 95	8S 95	1K 42	17S 42	2K 31	26S 31
OK 47	4S 47	OK 96	8S 96	1K 43	17S 43	2K 32	26S 32
OK 48	4S 48	OK 97	8S 97	1K 44	17S 44	2K 33	27S 33
OK 49	4S 49	OK 98	8S 98	1K 45	18S 45	2K 34	27S 34
OK 50	4S 50	OK 99	8S 99	1K 46	18S 46	2K 35	28S 35
OK 51	4S 51	OK100	8S100	1K 47	18S 47	2K 36	29S 36
OK 52	4S 52	OK101	8S101	1K 48	19S 48	2K 37	29S 37
OK 53	4S 53	OK102	8S102	1K 49	19S 49	2K 38	30S 38
OK 54	5S 54	OK103	8S103	1K 50	19S 50	2K 39	30S 39
OK 55	5S 55	1K 1	1S 1	1K 51	20S 51	3K 1	10S 1
OK 56	5S 56	1K 2	2S 2	1K 52	20S 52	3K 2	11S 2
OK 57	5S 57	1K 3	3S 3	1K 53	20S 53	3K 3	12S 3
OK 58	5S 58	1K 4	3S 4	1K 54	21S 54	3K 4	12S 4
OK 59	5S 59	1K 5	3S 5	1K 55	21S 55	3K 5	14S 5
OK 60	5S 60	1K 6	4S 6	1K 56	21S 56	3K 6	14S 6
OK 61	5S 61	1K 7	4S 7	1K 57	22S 57	3K 7	15S 7
OK 62	5S 62	1K 8	4S 8			3K 8	16S 8
OK 63	5S 63	1K 9	5S 9			3K 9	17S 9
OK 64	5S 64	1K 10	6S 10			3K 10	18S 10
		1K 11	6S 11			3K 11	18S 11
						3K 12	19S 12
						3K 13	20S 13

Table 1 (Continued)

3K 14	21S 14	4K 31	37S 31	7K 1	26S 1	9K 13	46S 13
3K 15	21S 15	5K 1	19S 1	7K 2	28S 2	9K 14	47S 14
3K 16	22S 16	5K 2	19S 2	7K 3	29S 3	9K 15	48S 15
3K 17	23S 17	5K 3	21S 3	7K 4	30S 4	9K 16	49S 16
3K 18	23S 18	5K 4	21S 4	7K 5	31S 5	10K 1	39S 1
3K 19	24S 19	5K 5	22S 5	7K 6	31S 6	10K 2	40S 2
3K 20	25S 20	5K 6	23S 6	7K 7	32S 7	10K 3	42S 3
3K 21	25S 21	5K 7	24S 7	7K 8	33S 8	10K 4	42S 4
3K 22	26S 22	5K 8	25S 8	7K 9	34S 9	10K 5	43S 5
3K 23	27S 23	5K 9	26S 9	7K 10	35S 10	10K 6	45S 6
3K 24	27S 24	5K 10	27S 10	7K 11	36S 11	10K 7	45S 7
3K 25	28S 25	5K 11	27S 11	7K 12	37S 12	10K 8	46S 8
3K 26	29S 26	5K 12	28S 12	7K 13	37S 13	10K 9	47S 9
3K 27	29S 27	5K 13	29S 13	7K 14	39S 14	10K 10	48S 10
3K 28	30S 28	5K 14	30S 14	7K 15	39S 15	10K 11	48S 11
3K 29	30S 29	5K 15	30S 15	7K 16	40S 16	10K 12	49S 12
3K 30	31S 30	5K 16	31S 16	7K 17	41S 17	10K 13	51S 13
3K 31	32S 31	5K 17	32S 17	7K 18	42S 18	11K 1	44S 1
3K 32	33S 32	5K 18	33S 18	7K 19	42S 19	11K 2	44S 2
3K 33	33S 33	5K 19	33S 19	7K 20	43S 20	11K 3	45S 3
3K 34	33S 34	5K 20	34S 20	7K 21	44S 21	11K 4	47S 4
3K 35	34S 35	5K 21	35S 21	8K 1	31S 1	11K 5	47S 5
4K 1	14S 1	5K 22	36S 22	8K 2	32S 2	11K 6	48S 6
4K 2	15S 2	5K 23	36S 23	8K 3	33S 3	11K 7	50S 7
4K 3	16S 3	5K 24	37S 24	8K 4	34S 4	11K 8	50S 8
4K 4	17S 4	5K 25	38S 25	8K 5	35S 5	11K 9	51S 9
4K 5	17S 5	5K 26	39S 26	8K 6	36S 6	11K 10	52S 10
4K 6	19S 6	5K 27	39S 27	8K 7	36S 7	11K 11	53S 11
4K 7	20S 7	6K 1	23S 1	8K 8	38S 8	12K 1	47S 1
4K 8	20S 8	6K 2	24S 2	8K 9	38S 9	12K 2	49S 2
4K 9	22S 9	6K 3	24S 3	8K 10	39S 10	12K 3	49S 3
4K 10	22S 10	6K 4	26S 4	8K 11	41S 11	12K 4	50S 4
4K 11	23S 11	6K 5	26S 5	8K 12	41S 12	12K 5	52S 5
4K 12	23S 12	6K 6	27S 6	8K 13	42S 13	12K 6	52S 6
4K 13	25S 13	6K 7	28S 7	8K 14	43S 14	12K 7	53S 7
4K 14	25S 14	6K 8	29S 8	8K 15	44S 15	12K 8	55S 8
4K 15	26S 15	6K 9	30S 9	8K 16	44S 16	12K 9	55S 9
4K 16	27S 16	6K 10	31S 10	8K 17	45S 17	13K 1	52S 1
4K 17	27S 17	6K 11	32S 11	8K 18	46S 18	13K 2	52S 2
4K 18	28S 18	6K 12	32S 12	8K 19	47S 19	13K 3	54S 3
4K 19	29S 19	6K 13	33S 13	9K 1	35S 1	13K 4	54S 4
4K 20	29S 20	6K 14	34S 14	9K 2	36S 2	13K 5	56S 5
4K 21	30S 21	6K 15	35S 15	9K 3	37S 3	13K 6	57S 6
4K 22	31S 22	6K 16	35S 16	9K 4	38S 4	14K 1	56S 1
4K 23	31S 23	6K 17	37S 17	9K 5	39S 5	14K 2	57S 2
4K 24	33S 24	6K 18	37S 18	9K 6	40S 6	14K 3	58S 3
4K 25	33S 25	6K 19	38S 19	9K 7	41S 7	14K 4	59S 4
4K 26	34S 26	6K 20	39S 20	9K 8	41S 8	15K 1	60S 1
4K 27	34S 27	6K 21	40S 21	9K 9	43S 9	15K 2	61S 2
4K 28	35S 28	6K 22	40S 22	9K 10	43S 10		
4K 29	36S 29	6K 23	41S 23	9K 11	44S 11		
4K 30	37S 30	6K 24	42S 24	9K 12	46S 12		

IDENTIFICATION OF C MODES

2C 1	7S 1	8C12	16S12	11C19	21S19	14C10	34S10
2C 2	5S 2	8C13	16S13	12C 1	37S 1	14C11	34S11
3C 1	9S 1	8C14	15S14	12C 2	35S 2	14C12	34S12
3C 2	9S 2	9C 1	28S 1	12C 3	35S 3	14C13	32S13
3C 3	8S 3	9C 2	26S 2	12C 4	33S 4	14C14	32S14
3C 4	7S 4	9C 3	26S 3	12C 5	33S 5	14C15	32S15
4C 1	12S 1	9C 4	24S 4	12C 6	32S 6	14C16	30S16
4C 2	12S 2	9C 5	24S 5	12C 7	31S 7	14C17	30S17
4C 3	10S 3	9C 6	24S 6	12C 8	31S 8	14C18	30S18
4C 4	10S 4	9C 7	22S 7	12C 9	29S 9	14C19	28S19
4C 5	10S 5	9C 8	22S 8	12C10	29S10	14C20	28S20
4C 6	9S 6	9C 9	21S 9	12C11	28S11	14C21	27S21
5C 1	16S 1	9C10	20S10	12C12	27S12	14C22	27S22
5C 2	14S 2	9C11	20S11	12C13	27S13	14C23	26S23
5C 3	14S 3	9C12	20S12	12C14	26S14	14C24	25S24
5C 4	13S 4	9C13	18S13	12C15	25S15	15C 1	45S 1
5C 5	12S 5	9C14	18S14	12C16	25S16	15C 2	45S 2
5C 6	12S 6	9C15	17S15	12C17	25S17	15C 3	44S 3
5C 7	11S 7	10C 1	30S 1	12C18	24S18	15C 4	43S 4
5C 8	10S 8	10C 2	30S 2	12C19	23S19	15C 5	42S 5
6C 1	18S 1	10C 3	28S 3	12C20	22S20	15C 6	41S 6
6C 2	17S 2	10C 4	28S 4	12C21	22S21	15C 7	40S 7
6C 3	17S 3	10C 5	27S 5	13C 1	40S 1	15C 8	39S 8
6C 4	16S 4	10C 6	26S 6	13C 2	38S 2	15C 9	39S 9
6C 5	15S 5	10C 7	25S 7	13C 3	38S 3	15C10	38S10
6C 6	15S 6	10C 8	24S 8	13C 4	36S 4	15C11	37S11
6C 7	13S 7	10C 9	24S 9	13C 5	36S 5	15C12	36S12
6C 8	13S 8	10C10	23S10	13C 6	35S 6	15C13	35S13
6C 9	13S 9	10C11	22S11	13C 7	34S 7	15C14	35S14
6C10	12S10	10C12	22S12	13C 8	34S 8	15C15	34S15
7C 1	21S 1	10C13	21S13	13C 9	32S 9	15C16	33S16
7C 2	21S 2	10C14	20S14	13C10	32S10	15C17	33S17
7C 3	19S 3	10C15	20S15	13C11	31S11	15C18	32S18
7C 4	19S 4	10C16	19S16	13C12	30S12	15C19	31S19
7C 5	19S 5	10C17	19S17	13C13	30S13	15C20	31S20
7C 6	17S 6	11C 1	33S 1	13C14	29S14	15C21	31S21
7C 7	17S 7	11C 2	33S 2	13C15	28S15	15C22	29S22
7C 8	15S 8	11C 3	31S 3	13C16	28S16	15C23	29S23
7C 9	15S 9	11C 4	31S 4	13C17	28S17	15C24	29S24
7C10	15S10	11C 5	30S 5	13C18	26S18	15C25	29S25
7C11	14S11	11C 6	29S 6	13C19	26S19	15C26	27S26
7C12	13S12	11C 7	29S 7	13C20	26S20	16C 1	49S 1
8C 1	24S 1	11C 8	27S 8	13C21	24S21	16C 2	47S 2
8C 2	23S 2	11C 9	27S 9	13C22	24S22	16C 3	47S 3
8C 3	23S 3	11C10	26S10	14C 1	42S 1	16C 4	45S 4
8C 4	22S 4	11C11	25S11	14C 2	42S 2	16C 5	45S 5
8C 5	21S 5	11C12	25S12	14C 3	40S 3	16C 6	43S 6
8C 6	20S 6	11C13	24S13	14C 4	40S 4	16C 7	43S 7
8C 7	19S 7	11C14	23S14	14C 5	38S 5	16C 8	43S 8
8C 8	19S 8	11C15	23S15	14C 6	38S 6	16C 9	41S 9
8C 9	18S 9	11C16	23S16	14C 7	38S 7	16C10	41S10
8C10	17S10	11C17	21S17	14C 8	36S 8	16C11	39S11
8C11	17S11	11C18	21S18	14C 9	36S 9	16C12	39S12

Table 2 (Continued)

16C13	39S13	17C20	37S20	18C27	35S27	20C 1	61S 1
16C14	37S14	17C21	36S21	18C28	32S28	20C 2	59S 2
16C15	37S15	17C22	35S22	18C29	31S29	20C 3	59S 3
16C16	37S16	17C23	35S23	19C 1	58S 1	20C 4	57S 4
16C17	35S17	17C24	34S24	19C 2	56S 2	20C 5	57S 5
16C18	35S18	17C25	34S25	19C 3	56S 3	20C 6	56S 6
16C19	35S19	17C26	32S26	19C 4	55S 4	20C 7	55S 7
16C20	33S20	17C27	32S27	19C 5	54S 5	20C 8	54S 8
16C21	33S21	18C 1	54S 1	19C 6	53S 6	20C 9	53S 9
16C22	33S22	18C 2	54S 2	19C 7	52S 7	20C10	53S10
16C23	32S23	18C 3	52S 3	19C 8	51S 8	20C11	52S11
16C24	31S24	18C 4	52S 4	19C 9	50S 9	20C12	51S12
16C25	31S25	18C 5	51S 5	19C10	50S10	20C13	50S13
16C26	30S26	18C 6	50S 6	19C11	49S11	20C14	49S14
16C27	30S27	18C 7	49S 7	19C12	48S12	20C15	49S15
17C 1	51S 1	18C 8	48S 8	19C13	47S13	20C16	48S16
17C 2	51S 2	18C 9	48S 9	19C14	46S14	20C17	47S17
17C 3	50S 3	18C10	46S10	19C15	46S15	20C18	47S18
17C 4	49S 4	18C11	46S11	19C16	45S16	20C19	46S19
17C 5	48S 5	18C12	45S12	19C17	44S17	20C20	45S20
17C 6	47S 6	18C13	44S13	19C18	44S18	20C21	45S21
17C 7	46S 7	18C14	44S14	19C19	43S19	20C22	43S22
17C 8	45S 8	18C15	43S15	19C20	42S20	20C23	43S23
17C 9	45S 9	18C16	42S16	19C21	42S21	20C24	43S24
17C10	44S10	18C17	42S17	19C22	41S22	20C25	41S25
17C11	43S11	18C18	41S18	19C23	40S23	20C26	41S26
17C12	42S12	18C19	40S19	19C24	39S24	20C27	41S27
17C13	41S13	18C20	40S20	19C25	39S25	20C28	37S28
17C14	41S14	18C21	38S21	19C26	38S26	20C29	37S29
17C15	40S15	18C22	38S22	19C27	38S27	20C30	36S30
17C16	39S16	18C23	38S23	19C28	34S28	20C31	35S31
17C17	39S17	18C24	36S24	19C29	34S29	20C32	35S32
17C18	38S18	18C25	36S25	19C30	33S30		
17C19	37S19	18C26	36S26	19C31	33S31		

Table 3.

IDENTIFICATION OF V MODES

0V 0	0S 0	5V13	17S13	8V 7	23S 7	10V 5	28S 5
1V 0	1S 0	5V14	17S14	8V 8	23S 8	10V 6	28S 6
1V 1	6S 1	5V15	18S15	8V 9	23S 9	10V 7	27S 7
1V 2	7S 2	5V16	18S16	8V10	24S10	10V 8	28S 8
1V 3	6S 3	6V 0	6S 0	8V11	24S11	10V 9	26S 9
1V 4	6S 4	6V 1	17S 1	8V12	24S12	10V10	28S10
1V 5	7S 5	6V 2	18S 2	8V13	23S13	10V11	29S11
2V 0	2S 0	6V 3	18S 3	8V14	24S14	10V12	29S12
2V 1	8S 1	6V 4	18S 4	8V15	24S15	10V13	28S13
2V 2	8S 2	6V 5	18S 5	8V16	24S16	10V14	28S14
2V 3	9S 3	6V 6	18S 6	8V17	24S17	10V15	29S15
2V 4	9S 4	6V 7	18S 7	8V18	25S18	10V16	29S16
2V 5	8S 5	6V 8	18S 8	8V19	25S19	10V17	29S17
2V 6	8S 6	6V 9	19S 9	8V20	24S20	10V18	29S18
2V 7	9S 7	6V10	19S10	8V21	26S21	10V19	30S19
3V 0	3S 0	6V11	19S11	8V22	25S22	10V20	30S20
3V 1	11S 1	6V12	18S12	8V23	25S23	10V21	29S21
3V 2	10S 2	6V13	19S13	8V24	26S24	10V22	30S22
3V 3	11S 3	6V14	19S14	8V25	26S25	10V23	30S23
3V 4	11S 4	6V15	19S15	9V 0	9S 0	10V24	30S24
3V 5	11S 5	6V16	20S16	9V 1	25S 1	10V25	30S25
3V 6	11S 6	6V17	20S17	9V 2	25S 2	10V26	31S26
3V 7	12S 7	6V18	20S18	9V 3	25S 3	10V27	31S27
3V 8	12S 8	7V 0	7S 0	9V 4	25S 4	10V28	31S28
3V 9	11S 9	7V 1	20S 1	9V 5	25S 5	10V29	32S29
3V10	11S10	7V 2	20S 2	9V 6	25S 6	10V30	32S30
4V 0	4S 0	7V 3	20S 3	9V 7	26S 7	11V 0	11S 0
4V 1	13S 1	7V 4	20S 4	9V 8	26S 8	11V 1	29S 1
4V 2	13S 2	7V 5	20S 5	9V 9	25S 9	11V 2	29S 2
4V 3	13S 3	7V 6	21S 6	9V10	25S10	11V 3	30S 3
4V 4	14S 4	7V 7	21S 7	9V11	26S11	11V 4	29S 4
4V 5	13S 5	7V 8	21S 8	9V12	26S12	11V 5	29S 5
4V 6	13S 6	7V 9	20S 9	9V13	26S13	11V 6	30S 6
4V 7	14S 7	7V10	21S10	9V14	27S14	11V 7	30S 7
4V 8	14S 8	7V11	21S11	9V15	27S15	11V 8	30S 8
4V 9	14S 9	7V12	21S12	9V16	26S16	11V 9	31S 9
4V10	14S10	7V13	22S13	9V17	26S17	11V10	30S10
4V11	15S11	7V14	22S14	9V18	27S18	11V11	30S11
4V12	15S12	7V15	22S15	9V19	27S19	11V12	31S12
4V13	14S13	7V16	21S16	9V20	27S20	11V13	31S13
5V 0	5S 0	7V17	22S17	9V21	28S21	11V14	31S14
5V 1	15S 1	7V18	22S18	9V22	28S22	11V15	31S15
5V 2	16S 2	7V19	22S19	9V23	28S23	11V16	32S16
5V 3	15S 3	7V20	23S20	9V24	28S24	11V17	31S17
5V 4	15S 4	7V21	23S21	9V25	27S25	11V18	31S18
5V 5	16S 5	7V22	23S22	9V26	28S26	11V19	32S19
5V 6	16S 6	8V 0	8S 0	9V27	28S27	11V20	32S20
5V 7	16S 7	8V 1	22S 1	9V28	29S28	11V21	32S21
5V 8	17S 8	8V 2	22S 2	10V 0	10S 0	11V22	32S22
5V 9	16S 9	8V 3	22S 3	10V 1	27S 1	11V23	33S23
5V10	16S10	8V 4	23S 4	10V 2	27S 2	11V24	32S24
5V11	16S11	8V 5	23S 5	10V 3	27S 3	11V25	32S25
5V12	17S12	8V 6	22S 6	10V 4	27S 4	11V26	33S26

Table 3. (Continued)

11V27	33S27	13V11	35S11	15V 4	39S 4	17V 8	44S 8
11V28	33S28	13V12	35S12	15V 5	40S 5	17V 9	44S 9
11V29	33S29	13V13	36S13	15V 6	39S 6	17V10	45S10
11V30	34S30	13V14	36S14	15V 7	39S 7	17V11	45S11
11V31	34S31	13V15	36S15	15V 8	40S 8	17V12	44S12
11V32	34S32	13V16	36S16	15V 9	40S 9	17V13	45S13
11V33	34S33	13V17	36S17	15V10	40S10	17V14	45S14
11V34	35S34	13V18	36S18	15V11	40S11	17V15	45S15
12V 0	12S 0	13V19	36S19	15V12	40S12	17V16	46S16
12V 1	32S 1	13V20	36S20	15V13	40S13	17V17	46S17
12V 2	31S 2	13V21	37S21	15V14	40S14	17V18	45S18
12V 3	32S 3	13V22	37S22	15V15	41S15	17V19	45S19
12V 4	32S 4	13V23	37S23	15V16	41S16	17V20	46S20
12V 5	32S 5	13V24	38S24	15V17	40S17	18V 0	18S 0
12V 6	33S 6	13V25	37S25	15V18	40S18	18V 1	46S 1
12V 7	33S 7	13V26	37S26	15V19	41S19	18V 2	46S 2
12V 8	32S 8	13V27	37S27	15V20	41S20	18V 3	46S 3
12V 9	33S 9	13V28	38S28	15V21	41S21	18V 4	46S 4
12V10	33S10	13V29	38S29	15V22	42S22	18V 5	46S 5
12V11	33S11	13V30	38S30	15V23	42S23	18V 6	46S 6
12V12	33S12	14V 0	14S 0	15V24	41S24	18V 7	47S 7
12V13	34S13	14V 1	36S 1	15V25	42S25	18V 8	47S 8
12V14	33S14	14V 2	37S 2	16V 0	16S 0	18V 9	46S 9
12V15	33S15	14V 3	36S 3	16V 1	41S 1	18V10	47S10
12V16	34S16	14V 4	37S 4	16V 2	41S 2	18V11	47S11
12V17	34S17	14V 5	37S 5	16V 3	41S 3	18V12	47S12
12V18	34S18	14V 6	37S 6	16V 4	41S 4	18V13	48S13
12V19	34S19	14V 7	37S 7	16V 5	41S 5	18V14	48S14
12V20	35S20	14V 8	37S 8	16V 6	42S 6	18V15	47S15
12V21	34S21	14V 9	37S 9	16V 7	42S 7	18V16	47S16
12V22	34S22	14V10	37S10	16V 8	42S 8	18V17	48S17
12V23	34S23	14V11	38S11	16V 9	42S 9	18V18	48S18
12V24	35S24	14V12	38S12	16V10	42S10	19V 0	19S 0
12V25	35S25	14V13	38S13	16V11	42S11	19V 1	48S 1
12V26	35S26	14V14	38S14	16V12	43S12	19V 2	48S 2
12V27	36S27	14V15	38S15	16V13	43S13	19V 3	48S 3
12V28	36S28	14V16	38S16	16V14	42S14	19V 4	48S 4
12V29	35S29	14V17	38S17	16V15	42S15	19V 5	49S 5
12V30	35S30	14V18	39S18	16V16	43S16	19V 6	49S 6
12V31	36S31	14V19	39S19	16V17	43S17	19V 7	48S 7
12V32	36S32	14V20	38S20	16V18	43S18	19V 8	49S 8
12V33	36S33	14V21	39S21	16V19	44S19	19V 9	49S 9
13V 0	13S 0	14V22	39S22	16V20	44S20	19V10	49S10
13V 1	34S 1	14V23	39S23	16V21	43S21	19V11	50S11
13V 2	34S 2	14V24	40S24	16V22	44S22	19V12	50S12
13V 3	34S 3	14V25	40S25	17V 0	17S 0	19V13	49S13
13V 4	35S 4	14V26	40S26	17V 1	43S 1	19V14	50S14
13V 5	34S 5	14V27	40S27	17V 2	43S 2	19V15	50S15
13V 6	34S 6	14V28	39S28	17V 3	43S 3	20V 0	20S 0
13V 7	35S 7	15V 0	15S 0	17V 4	44S 4	20V 1	50S 1
13V 8	35S 8	15V 1	38S 1	17V 5	44S 5	20V 2	50S 2
13V 9	35S 9	15V 2	39S 2	17V 6	44S 6	20V 3	51S 3
13V10	36S10	15V 3	39S 3	17V 7	44S 7	20V 4	51S 4

Table 3 (Continued)

20V 5	50S 5	21V 3	53S 3	22V 3	55S 3	23V 5	58S 5
20V 6	51S 6	21V 4	53S 4	22V 4	56S 4	23V 6	58S 6
20V 7	51S 7	21V 5	53S 5	22V 5	55S 5	24V 0	24S 0
20V 8	52S 8	21V 6	54S 6	22V 6	55S 6	24V 1	59S 1
20V 9	52S 9	21V 7	54S 7	22V 7	56S 7	24V 2	60S 2
20V10	51S10	21V 8	53S 8	22V 8	56S 8	24V 3	60S 3
20V11	51S11	21V 9	54S 9	23V 0	23S 0	25V 0	25S 0
20V12	52S12	21V10	54S10	23V 1	57S 1	25V 1	62S 1
21V 0	21S 0	22V 0	22S 0	23V 2	58S 2		
21V 1	53S 1	22V 1	55S 1	23V 3	57S 3		
21V 2	53S 2	22V 2	55S 2	23V 4	58S 4		

Table 4.

IDENTIFICATION OF R MODES

[OR 1]			[OS 1]		
OR 2	TO	OR150	OS 2	TO	OS150
1R 16	TO	1R150	1S 16	TO	1S150
2R 6	TO	2R 25	3S 6	TO	3S 25
2R 26	TO	2R150	2S 26	TO	2S150
3R 9	TO	3R 40	4S 9	TO	4S 40
3R 41	TO	3R143	3S 41	TO	3S143
4R 10	TO	4R 53	5S 10	TO	5S 53
4R 54	TO	4R128	4S 54	TO	4S128
5R 12	TO	5R 12	7S 12	TO	7S 12
5R 13	TO	5R 66	6S 13	TO	6S 66
5R 67	TO	5R118	5S 67	TO	5S118
6R 15	TO	6R 15	8S 15	TO	8S 15
6R 16	TO	6R 79	7S 16	TO	7S 79
6R 80	TO	6R112	6S 80	TO	6S112
7R 18	TO	7R 19	9S 18	TO	9S 19
7R 20	TO	7R 92	8S 20	TO	8S 92
7R 93	TO	7R107	7S 93	TO	7S107
8R 20	TO	8R 22	10S 20	TO	10S 22
8R 23	TO	8R102	9S 23	TO	9S102
9R 22	TO	9R 24	11S 22	TO	11S 24
9R 25	TO	9R 97	10S 25	TO	10S 97
10R 25	TO	10R 26	12S 25	TO	12S 26
10R 27	TO	10R 92	11S 27	TO	11S 92
11R 28	TO	11R 30	13S 28	TO	13S 30
11R 31	TO	11R 89	12S 31	TO	12S 89
12R 30	TO	12R 33	14S 30	TO	14S 33
12R 34	TO	12R 85	13S 34	TO	13S 85
13R 32	TO	13R 36	15S 32	TO	15S 36
13R 37	TO	13R 81	14S 37	TO	14S 81
14R 34	TO	14R 39	16S 34	TO	16S 39
14R 40	TO	14R 78	15S 40	TO	15S 78
15R 37	TO	15R 41	17S 37	TO	17S 41
15R 42	TO	15R 75	16S 42	TO	16S 75
16R 40	TO	16R 44	18S 40	TO	18S 44
16R 45	TO	16R 72	17S 45	TO	17S 72
17R 42	TO	17R 47	19S 42	TO	19S 47
17R 48	TO	17R 68	18S 48	TO	18S 68
18R 45	TO	18R 50	20S 45	TO	20S 50
18R 51	TO	18R 65	19S 51	TO	19S 65
19R 46	TO	19R 53	21S 46	TO	21S 53
19R 54	TO	19R 62	20S 54	TO	20S 62
20R 49	TO	20R 56	22S 49	TO	22S 56
20R 57	TO	20R 59	21S 57	TO	21S 59
21R 52	TO	21R 57	23S 52	TO	23S 57

Table 5

A List of H modes

1S 2	1S 9	2S 1	2S 9
1S 3	1S10	2S 3	2S10
1S 4	1S11	2S 4	2S11
1S 5	1S12	2S 5	2S12
1S 6	1S13	2S 6	2S13
1S 7	1S14	2S 7	2S14
1S 8	1S15	2S 8	2S15

(continued)

3S 1	10S18	14S23	17S27	19S39	21S45	23S50	25S47	28S36
3S 2	10S19	14S24	17S28	19S40	22S22	23S51	25S48	28S37
4S 1	11S11	14S25	17S29	19S41	22S23	24S23	25S49	28S38
4S 2	11S12	14S26	17S30	20S19	22S26	24S24	25S50	28S39
4S 3	11S13	14S27	17S31	20S20	22S27	24S25	25S51	28S40
4S 4	11S14	14S28	17S32	20S22	22S28	24S26	26S26	28S41
4S 5	11S15	14S29	17S33	20S23	22S29	24S27	26S27	28S42
5S 3	11S16	15S15	17S34	20S24	22S30	24S29	26S28	28S43
5S 4	11S17	15S16	17S35	20S25	22S31	24S30	26S29	29S29
5S 5	11S18	15S17	17S36	20S26	22S32	24S31	26S30	29S30
5S 6	11S19	15S18	18S17	20S27	22S33	24S32	26S33	29S31
5S 7	11S20	15S19	18S19	20S28	22S34	24S33	26S34	29S32
5S 8	11S21	15S20	18S20	20S29	22S35	24S34	26S35	29S33
6S 5	12S11	15S21	18S21	20S30	22S36	24S35	26S36	29S34
6S 6	12S12	15S22	18S22	20S31	22S37	24S36	26S37	29S35
6S 7	12S13	15S23	18S23	20S32	22S38	24S37	26S38	29S38
6S 8	12S14	15S24	18S24	20S33	22S39	24S38	26S39	29S39
6S 9	12S15	15S25	18S25	20S34	22S40	24S39	26S40	29S40
7S 6	12S16	15S26	18S26	20S35	22S41	24S40	26S41	29S41
7S 7	12S17	15S27	18S27	20S36	22S42	24S41	26S42	29S42
7S 8	12S18	15S28	18S28	20S37	22S43	24S42	26S43	30S30
7S 9	12S19	15S29	18S29	20S38	22S44	24S43	26S44	30S31
7S10	12S20	15S30	18S30	20S39	22S45	24S44	26S45	30S32
7S11	12S21	15S31	18S31	20S40	22S46	24S45	26S46	30S33
8S 7	12S22	16S16	18S32	20S41	22S47	24S46	26S47	30S34
8S 8	12S23	16S17	18S33	20S42	22S48	24S47	26S48	30S35
8S 9	12S24	16S18	18S34	20S43	23S23	24S48	27S27	30S36
8S10	13S13	16S19	18S35	20S44	23S24	24S49	27S28	30S37
8S11	13S14	16S20	18S36	21S20	23S25	24S50	27S29	30S40
8S12	13S15	16S21	18S37	21S21	23S28	24S51	27S30	31S31
8S13	13S16	16S22	18S38	21S24	23S29	24S52	27S31	31S32
8S14	13S17	16S23	18S39	21S25	23S30	25S25	27S32	31S33
9S 8	13S18	16S24	19S18	21S26	23S31	25S26	27S35	31S34
9S 9	13S19	16S25	19S21	21S27	23S32	25S27	27S36	31S35
9S10	13S20	16S26	19S22	21S28	23S33	25S28	27S37	31S36
9S11	13S21	16S27	19S23	21S29	23S34	25S31	27S38	31S37
9S12	13S22	16S28	19S24	21S30	23S35	25S32	27S39	31S38
9S13	13S23	16S29	19S25	21S31	23S36	25S33	27S40	31S39
9S14	13S24	16S30	19S26	21S32	23S37	25S34	27S41	32S32
9S15	13S25	16S31	19S27	21S33	23S38	25S35	27S42	32S33
9S16	13S26	16S32	19S28	21S34	23S39	25S36	27S43	32S34
9S17	13S27	16S33	19S29	21S35	23S40	25S37	27S44	32S35
10S 9	14S14	17S18	19S30	21S36	23S41	25S38	27S45	32S36
10S10	14S15	17S19	19S31	21S37	23S42	25S39	27S46	32S37
10S11	14S16	17S20	19S32	21S38	23S43	25S40	28S28	32S38
10S12	14S17	17S21	19S33	21S39	23S44	25S41	28S29	33S35
10S13	14S18	17S22	19S34	21S40	23S45	25S42	28S30	33S36
10S14	14S19	17S23	19S35	21S41	23S46	25S43	28S31	33S37
10S15	14S20	17S24	19S36	21S42	23S47	25S44	28S32	34S34
10S16	14S21	17S25	19S37	21S43	23S48	25S45	28S33	
10S17	14S22	17S26	19S38	21S44	23S49	25S46	28S34	