Table Slot	Use Description	Mode ID	Cycle Duration	Rate			#	Steps	eV	Collapse
	1024s Cycle Tables									
6	Slow Photo-electrons	A21	1024	Normal	IONS	Energies	64	0 to 127	Full Range + FB	Adjacent 2
						Elevations	6	0 to 15		0-1,2-4,5-7,8-10,11-13,14-15
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	64	0-62, 123	4-811, highest	Full Res
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	6	0 to 15*		0-1,2-4,5-7,8-10,12-13,14-15
5	Solar Wind at the Comet	A22	1024	Normal	IONS	Energies	32	5 to 100	25 to 5400	Adjacent 3
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	16	0 to 15		Full res
					ELECTRONS	Energies	32	0 to 63	4 to 811	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
8	High Res Angular	A31	1024	Burst	IONS	Energies	64	0 to 127	Full Range + FB	Adjacent 2
						Elevations	16	0 to 15		Full Res
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	64	0 to 127	Full Range + FB	Adjacent 2
						Elevations	16	0 to 15		Full Res
						Azimuths	15	0 to 15*		Full Res*
9	High Res Energy	A32	1024	Burst	IONS	Energies	124	0 to 123	Full Range	Full Res
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	128	0 to 127	Full Range + FB	Full Res
						Elevations	16	0 to 15		Full Res
						Azimuths	8	0 to 15*		Adjacent 2*
	512s Cycle Tables									
3	Solar Wind at the Comet	921	512	Normal	IONS	Energies	24	5 to 100	25 to 5400	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	24	0 to 71	4 to 1225	Adjacent 3
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
4	Pickup, High Res Angular	931	512	Burst	IONS	Energies	32	0 to 127	Full Range + FB	Adjacent 4
						Elevations	16	0 to 15		Full Res
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	33	0 to 95, 123	4 to 4202 + highest	Adjacent 3
						Elevations	16	0 to 15		Full Res
						Azimuths	15	0 to 15*		Full Res*

Table Slot	Use Description	Mode ID	Cycle Duration	Rate			#	Steps	eV	Collapse
					256s Cycle Tables					
12	Full Coverage, Low Res	821	256	Normal	IONS	Energies	32	0 to 127	Full Range + FB	Adjacent 4
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	32	0 to 127	Full Range + FB	Adjacent 4
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	4	0 to 15*		Adjacent 4*
1	Slow Photo-electrons	831	256	Burst	IONS	Energies	63	0 to 125	Full Range	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	63	0 to 62	4 to 772	Full Res
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
0	Solar Wind at the Comet	832	256	Burst	IONS	Energies	33	0 to 98	4 to 4901	Adjacent 3
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	16	0 to 15		Full res
					ELECTRONS	Energies	32	0 to 63	4 to 811	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	15	0 to 15*		Full res*
2	Pickup	833	256	Burst	IONS	Energies	63	0 to 125	Full Range	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	63	0 to 125	Full Range	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
					128s Cycle Tables					
10	Solar Wind at the Comet	721	128	Normal	IONS	Energies	16	36 to 99	202 to 5156	Adjacent 4
						Elevations	3	0 to 15		0-4, 5-10, 11-15
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	16	0 to 63	4 to 811	Adjacent 4
						Elevations	3	0 to 15		0-4, 5-10, 11-15
						Azimuths	8	0 to 15*		Adjacent 2*
11	Full Range, Low Res	731	128	Burst	IONS	Energies	32	0 to 127	Full Range + FB	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	31	0 to 123	Full Range	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
7	Solar Wind at the Comet	732	128	Burst	IONS	Energies	16	36 to 99	202 to 5156	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	31	0 to 92	4 to 3603	Adjacent 3
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*

Table Slot	Use Description	Mode ID	Cycle Duration	Rate			#	Steps	eV	Collapse
					Commissioning Tables					
5	Normal2	202	**128**	**Normal**	IONS	Energies	1	0 to 30	4 to 151	All
						Elevations	1	0 to 15		All
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	1	0 to 30	4 to 151	All
						Elevations	1	0 to 15		All
						Azimuths	16	0 to 15		Full Res
6	Burst2	3C0	**128**	**Burst**	IONS	Energies	31	0 to 30	4 to 151	Full Res
						Elevations	1	0 to 15		All
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	31	0 to 30	4 to 151	Full Res
						Elevations	1	0 to 15		All
						Azimuths	16	0 to 15		Full Res
					Pre PC10 Nominal Tables					
9	Cal Minimal	1C0	**1024**	**Minimal**	IONS	Energies	77	0 to 127	Full Range + FB	Full Res (0-25), Adjacent 2(26-127)
						Elevations	2	0 to 15		Adjacent 8
						Azimuths	2	0 to 15		0-2&12-14,3-11
					ELECTRONS	Energies	77	0 to 127	Full Range + FB	Full Res (0-25),Adjacent 2(26-127)
						Elevations	2	0 to 15		Adjacent 8
						Azimuths	2	0 to 15		Adjacent 8
9	Cal Minimal, No ELC 11	1C1	**1024**	**Minimal**	IONS	Energies	77	0 to 127	Full Range + FB	Full Res (0-25), Adjacent 2(26-127)
						Elevations	2	0 to 15		Adjacent 8
						Azimuths	2	0 to 15		0-2&12-14,3-11
					ELECTRONS	Energies	77	0 to 127	Full Range + FB	Full Res (0-25),Adjacent 2(26-127)
						Elevations	2	0 to 15		Adjacent 8
						Azimuths	2	0 to 15*		Adjacent 8*
10	Cal Normal	2C0	**128**	**Normal**	IONS	Energies	64	5 to 100	Full Range + FB	Adjacent 2
						Elevations	2	0 to 15		Adjacent 8
						Azimuths	3	0 to 15		0-2,3-11,12-15
					ELECTRONS	Energies	64	0 to 63	Full Range + FB	Adjacent 2
						Elevations	3	0 to 15		0-4,5-10,11-15
						Azimuths	2	0 to 15		Adjacent 8
10	Cal Normal, No ELC 11	2C1	**128**	**Normal**	IONS	Energies	64	5 to 100	Full Range + FB	Adjacent 2
						Elevations	2	0 to 15		Adjacent 8
						Azimuths	3	0 to 15		0-2,3-11,12-15
					ELECTRONS	Energies	64	0 to 63	Full Range + FB	Adjacent 2
						Elevations	3	0 to 15		0-4,5-10,11-15
						Azimuths	2	0 to 15*		Adjacent 8*
11	Cal Burst	3C0	**128**	**Burst**	IONS	Energies	63	0 to 126	Full Range	Adjacent 2
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	8	0 to 15		0-2&12-15,3-4,5,6,7,8,9,10-11
					ELECTRONS	Energies	63	0 to 126	Full Range	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	4	0 to 15		Adjacent 4

Table Slot	Use Description	Mode ID	Cycle Duration	Rate			#	Steps	eV	Collapse
11	Cal Burst, No ELC 11	3C1	**128**	**Burst**	IONS	Energies	63	0 to 126	Full Range	Adjacent 2
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	8	0 to 15		0-2&12-15,3-4,5,6,7,8,9,10-11
					ELECTRONS	Energies	63	0 to 126	Full Range	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	4	0 to 15*		Adjacent 4*
Special Testing Tables										
0	Noisy ELC Channel Test	3C2	**128**	**Burst**	IONS	Energies	63	0 to 126	Full Range	Adjacent 2
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	8	0 to 15		0-2&12-15,3-4,5,6,7,8,9,10-11
					ELECTRONS	Energies	56	0 to 126	Full Range	0-1,2-4,5-100(Sequence of Adjacent 2,2,3,2,2,3),101-102,103-104,105-107,108-125(Adjacent 2)
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	9	0 to 15		0-7,8,9,10,11,12,13,14,15
0	Pointing Test	2C3	**128**	**Burst**	IONS	Energies	4	5 to 15, 20 to 45, 55 to 66, 73 to 79	25 to 69, 90 to 323, 539 to 949, 1359 to 1846	5-15,20-45,55-66,73-79
						Elevations	16	0 to 15		Full Res
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	11	1 to 17, 31 to 43	8 to 77, 155 to 293	1,2,3,4,5,6-7,8-9,10-11,12-14,15-17,31-43
						Elevations	16	0 to 15		Full Res
						Azimuths	16	0 to 15		Full Res
0	Cartwheel Test	3C3	**128**	**Burst**	IONS	Energies	8	39 to 83	202 to 2269	39-43,44-49,50-57,58-62,63-67,68-72,73-76,77-83
						Elevations	16	0 to 15		Ful Res
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	7	0 to 54	4 to 513	0-2,3-6,7-11,12-20,21-31,32-45,46-54
						Elevations	16	0 to 15		Full Res
						Azimuths	15	0 to 15*		Full Res*

Table Slot	Use Description	Mode ID	Cycle Duration	Rate			#	Steps	eV	Collapse
MSB Tables										
2	MSB Normal	2A0	**128**	**Normal**	IONS	Energies	7	3 to 80	17 to 1946	3-13,14-23,24-44,45-54,55-60,61-68,69-80
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	10	0 to 15		0,1,2,3-5,6-8,9-11,12,13,14,15
					ELECTRONS	Energies	6	12 to 74	56 to 1428	12-22,23-30,31-44,45-54,55-65,66-74
						Elevations	4	0 to 15		Adjacent 4
						Azimuths	8	0 to 15		Adjacent 2
3	MSB Burst	3A0	**128**	**Burst**	IONS	Energies	8	3 to 80	17 to 1946	3-13,14-23,24-34,35-44,45-54,55-60,61-69,70-80
						Elevations	16	0 to 15		Full Res
						Azimuths	16	0 to 15		Full Res
					ELECTRONS	Energies	7	0 to 74	4 to 1428	0-12,13-22,23-30,31-44,45-54,55-65,66-74
						Elevations	16	0 to 15		Full Res
						Azimuths	16	0 to 15		Full Res
ESB2 Tables										
0	ESB2 Approach	2E0	**128**	**Normal**	IONS	Energies	16	36 to 99	202 to 5156	Adjacent 4
						Elevations	3	0 to 15		0-4, 5-10, 11-15
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	16	40 to 103	250 to 6334	Adjacent 4
						Elevations	3	0 to 15		0-4, 5-10, 11-15
						Azimuths	8	0 to 15*		Adjacent 2*
1	ESB2 Approach	3E0	**128**	**Burst**	IONS	Energies	31	0 to 123	Full Range	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	32	40 to 103	250 to 6334	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*

Table Slot	Use Description	Mode ID	Cycle Duration	Rate			#	Steps	eV	Collapse
2	ESB2 Inner Mag	3E1	128	Burst	IONS	Energies	32	0 to 127	Full Range + FB	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	31	0 to 123	Full Range	Adjacent 4
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
3	ESB2 Upstream	3E2	128	Burst	IONS	Energies	31	38 to 99	224 to 5156	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	32	0 to 63	4 to 811	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*
4	ESB2 Upstream	2E1	128	Normal	IONS	Energies	16	36 to 99	202 to 5156	Adjacent 4
						Elevations	3	0 to 15		0-4, 5-10, 11-15
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	16	0 to 63	4 to 811	Adjacent 4
						Elevations	3	0 to 15		0-4, 5-10, 11-15
						Azimuths	8	0 to 15*		Adjacent 2*
Post PC10 Replaced Tables										
7	Pickup	A23	1024	Normal	IONS	Energies	64	0 to 127	Full Range + FB	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15		0,1,2,3-11,12,13,14,15
					ELECTRONS	Energies	32	0 to 63	4 to 811	Adjacent 2
						Elevations	8	0 to 15		Adjacent 2
						Azimuths	8	0 to 15*		Adjacent 2*

These tables define the configurations of the acquisition tables used by IES.

Cycling of ESA voltages is completed using 128 steps (0 to 127) which include 4 steps (124 to 127) during "flyback" (FB), the transition from the highest voltage of 1667 V (step 123) to 0 V (step 127). While the actual transition time does not require all 4 steps, i.e. the 0 V level may be attained in 2 steps or less, science data readings during the first three steps of the flyback should be considered unreliable. When flyback steps are averaged, they are averaged only with other flyback steps. Step 127 may be considered as 0V for background measurements if not averaged.

Initial flight measurements indicated a high level of noise counts in ELC Azimuth (Sector) #11. In 2006, the after a test, all mode tables were updated to discard counts from this channel. If a mode returns counts averaged across multiple sectors, the counts in Azimuth #11 are excluded from the average. In the mode table, when the number of averaged (collapsed) ELC azimuths is displayed, an asterisk, "*" is appended to indicate that sector 11 is not included in the average.