

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
1 Ceres													
I	Prograde rotation								-----				Mor77
I	Prograde rotation								-----				Han77
P			270° +36°	—P—				-----				Joh+83	
R	Concentric ring region ⁶								-----				Ost87
S	—S—		332° +70°	—S—		—S—		-----				Sai+93	
Synthesis	°	°	332° +70°					-----				Synthesis	
2 Pallas													
EZ			228° +43°	—E—				0.325440				Sch+76	
I	Prograde rotation								-----				Mor77
I	Prograde rotation								-----				Han77
Z			211° +38°	31° -38°			-----					Bur+83	
AM	44° +4°		148° +55°	224° -4°	328° -55°			-----	1.14	1.0 ¹		Zap+84	
A			200° +40°	20° -40°			-----					Bin84	
A			220° +15°	40° -15°			-----					Bin84	
A	49° +6°		157° +53°	229° -6°	337° -53°			-----	1.14	1.0 ¹		Bur+85	
R	Aspect circle ⁷								-----				Ost85
OEAI	—O—		227° +20°	—E—	—E—			0.325995	1.11	1.03		Lam85	
OEA	54° -6°		—O—	—E—	—E—			0.32555136	1.06	1.05		Mag86	
R	Concentric ring region ⁶								-----				Ost87
S	100° -22°		295° +16°	—S—	—S—			-----	1.10	1.01		Dr+89a	
O	70° +15°		250° +15°	70° -15°	250° -15°			-----	1.11	1.30		Dr+89b	
3 Juno													
EA	71° +49°				—E—			0.3004950				Cha+62	
AM	101° +29°		321° +57°	141° -57°	281° -29°			-----	1.23	1.0 ¹		Zap+84	
OEA	110° +40°		—O—	—E—	—E—			0.30040	1.20	1.02		Mag86	
E	104° +36°		316° +62°	—E—	—E—			0.3003969				Bir+89	
EAM	108° +34°				—E—	—E—			0.3003970	1.18	1.0 ²		Eri+93
EA	108° +38°				—E—	—E—			0.3003970	1.20	1.26		Dot+95
L	103° +27°								0.3003971	1.2	1.3 ³¹		Ka+02a
Synthesis	106° +34°				—E—	—E—			0.3003970	1.2	1.3		Synthesis

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	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
4 Vesta														
EA	14°	+80°					—E—		0.2227006				Cai56	
EA	—E—		—E—			-90°		-90°	0.4453666	1.14	1.0 ¹		Hau58	
EA	57°	+74°					—E—		0.2225884				Cha+62	
E	126°	+65°				—E—		—E—	0.22258871				Geh67	
E	139°	+47°	333°	+39°		—E—		—E—	0.4451021	shape ²¹			Tay73	
I	Prograde rotation								-----				Mor77	
I	Prograde rotation								-----				Han77	
E	103°	+43°	301°	+33°		—E—		—E—	0.2225889				Tay+85	
E	120°	+65°	325°	+55°		—E—		—E—	0.22258849	1.01	1.4 ²		Mag86	
AM	85°	+58°	310°	+60°					-----	1.0 ¹	1.27	X ¹⁸	Cel+87	
SE	—S—		336°	+55°					0.2225887	1.10	1.14	X ²⁰	Dr+88a	
S	—S—		311°	+67°		—S—		—S—	-----	1.07	1.14		Dr+89a	
EA	160°	+52°	340°	+40°		—E—		—E—	0.2225885				Rey+93	
S	—S—		336°	+63°		—S—		—S—	-----	1.03	1.2		Tho+97	
Synthesis	—S—		322°	+53°		—ES—		—ES—	0.2225886	1.1	1.2		Synthesis	
5 Astraea														
E							328°	-9°	0.7005047				Tay78	
AM	131°	+49°	328°	+46°	148°	-46°	310°	-49°	-----	1.29	1.0 ¹		Za+86b	
R			Concentric ring region ⁶							-----				Ost87
EA	125°	+46°	318°	+44°		—E—		—E—	0.700026	1.27			Eri+93	
EA	114°	+57°				—E—		—E—	0.700026	1.21	1.15		DeA95	
AM			312°	+58°	132°	-58°			-----	1.44	1.30		Bla+00	
Synthesis	123°	+51°	319°	+49°		—E—		—E—	0.700026	1.24			Synthesis	
6 Hebe														
A	145°	+15°					—E—		-----				Geh+62	
E			365°	+50°					0.3031020	1.15	1.0 ¹		Geh+77	
AM	130°	+33°	344°	+30°	164°	-30°	310°	-33°	-----	1.24	1.0 ¹		Zap+84	
OEA	—O—		355°	+50°		—E—		—E—	0.3031025	1.14	1.2		Mag86	
R			Concentric ring region ⁶							-----				Ost87
E			363°	+60°		—E—		—E—	0.3031024				Mic88	
EA			365°	+27°		—E—		—E—	0.3031023	1.13	1.06		DeA95	
EA	—O—		353°	+24°		—E—		—E—	0.3031026	1.14	1.00		Dot+95	
EA			check ⁵							-----				Lag+95
AM	128°	+30°					308°	-30°	-----	1.32	1.11		Bla+00	
Synthesis	—O—		358°	+40°		—E—		—E—	0.3031025	1.14			Synthesis	

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	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
7 Iris														
EA			184° +55°	—E—					0.2967853		shape ⁹		Cai56	
AM			193° +15°		13° -15°				-----				Geh+62	
AM	11° +41°						191° -41°		-----	1.31	1.35		Tay77	
EA	15° +25°		195° +15°	—E—		—E—			0.29745197	1.18	1.40		Mag86	
AM	18° +33°		193° +16°		13° -16°		198° -33°		-----	1.19	1.21		Za+86b	
R			Concentric ring region ⁶							-----				Ost87
EA	8° +35°		187° +5°	—E—		—E—			0.29745195	1.24	1.36		DeA95	
R	15° +25°								-----				Mit+95	
L	20° +10°		200° +10°	————		————			0.2974517	1.2	1.0 ³¹		Ka+02a	
Synthesis	15° +28°		196° +10°	—E—		—E—			0.2974519	1.2	1.2		Synthesis	
8 Flora														
A	157° +10°						—E—		-----				Geh+62	
A	140°		320°		140°		320°		-----				Zap+83	
A	148° +45°		328° +45°		148° -45°		328° -45°		-----	1.12	1		Hol+87	
AM	135° +43°		327° +32°		147° -32°		315° -43°		-----	1.10	1.28		DiM+89	
EA	139° +14°						319° -14°		-----	1.05	1.16		DeA95	
AM	122° +37°						302° -37°		-----	1.097	1.062		Bla+98	
9 Metis														
AM	156° +15°						336° -15°		-----				Geh+62	
A			348° +76°		168° -76°				-----				Cha+62	
AM	191° +56°						371° -56°		-----	1.30	1.70		Zap+79	
AM	186° +43°		362° +26°		182° -26°		366° -43°		-----	1.32	1.34		Zap+84	
R			Concentric ring region ⁶							-----				Ost87
EAM	183° +25°		361° +9°	—E—		—E—			0.2116324	1.27	1.26		Dr+88b	
EAM	180° +30°		360° +20°	—E—		—E—			0.2116322	1.27	1.26		Mag90a	
EAM	181° +23°		360° +7°	—E—		—E—			0.2116323	1.27	1.24		Dru+91	
EA	185° +31°			—E—		—E—			0.2116323	1.31	1.22		DeA95	
Synthesis	182° +28°		360° +13°	—E—		—E—			0.2116323	1.30	1.24		Synthesis	
10 Hygiea														
I							Retrograde rotation		-----				Mor77	
EA	—E—	—E—			112° -41°		299° -39°		1.152462	1.36	1.04		Mic+91	
EA	—E—	—E—			100° -34°		285° -34°		1.150969	1.28	0.65		Eri+93	
EAM	—E—	—E—			117° -37°		304° -35°		1.150977	1.30	1.18		Mic93	
AM	118° +44°						298° -44°		-----	1.343	1.144		Bla+98	
AM	122° +42°						302° -42°		-----	1.343	1.444		Bla+98	
L	————	————			115° -30°		300° -30°		1.150967	1.3	1.1 ³¹		Ka+02a	
Synthesis	—E—	—E—			111° -36°		298° -37°		1.15097	1.29			Synthesis	
11 Parthenope														
AM	64° +38°		253° +51°		73° -51°		244° -38°		-----	1.225	1.208		Bla+98	
12 Victoria														
A			242° +17°		62° -17°				0.36060				Tem+69	
R			Concentric ring region ⁶							-----				Ost87
EA	9° +55°		176° +40°	—E—		—E—			0.3608665	1.25	1.00		Dot+95	
Synthesis	9° +55°		176° +35°	—E—		—E—			0.3608665	1.25	1.00		Synthesis	

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	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
13 Egeria													
AM	103°	+13°			283°	-13°			-----	1.43	1.26		Bla+00
14 Irene													
AM			270°	+34°	90°	-34°			-----	1.148	1.080		Bla+98
15 Eunomia													
EA	—E—	—E—			-90°		-90°		0.253448				Gro+54
EA	—E—	—E—					337°	-82°	0.25344810	1.51	?		Cai56
EA	—E—	—E—			-90°		-90°		0.253448				HG+58
EA	—E—	—E—			70°	-74°			0.25344810				Cai60
EA	—E—	—E—			-90°		-90°		0.25336				Sca+75
A	164°	+52°	————	————			344°	-52°	-----	1.6	1.0 ¹		Pii+85
A	170°	+57°	————	————			350°	-57°	-----	1.6	1.4 ¹		Pii+85
E	Prograde rotation		—E—	—E—					0.25336				Lup+85
EA	—E—	—E—	106°	-73°	351°	-61°			0.25344806	1.50	1.0		Mag86
E	—E—	—E—	131°	-71°	360°	-50°			0.25344810				Mic88
EAM	—E—	—E—	82°	-78°	352°	-61°			0.25344805	1.40	1.06		Dr+88b
EA	—E—	—E—	108°	-74°	350°	-59°			0.25344808	1.44	1.0		Mag90a
EAM	—E—	—E—	106°	-73°	————				0.25344806	1.44	1.02		Dru+91
EA	—E—	—E—	96°	-63°					0.25344806	1.47	1.00		DeA92
E	—E—	—E—	Retrograde rotation						-----				Kru+92
EAM	—E—	—E—	102°	-76°	354°	-57°			0.25344814	1.36	1.20		Mic93
EA	—E—	—E—	106°	-73°					0.25344806	1.47	1.00		DeA95
L	————	————	————	————	355°	-65°			0.25344800	1.4	1.2 ³¹		Ka+02a
Synthesis	—E—	—E—	106°	-74°	353°	-60°			0.25344808	1.42	1.1		Synthesis
16 Psyche													
EZ	————	225°	+5°	—E—	—E—				0.17483120				Zho+82
Z		222°	+4°	42°	-4°				0.174831	1.3	1.3		Lup+83
AM	40°	+23°	217°	+31°	37°	-31°	220°	-23°	-----	1.32	1.26		Zap+84
E	41°	+33°	223°	+37°					0.1748143				Ted+85
AM	39°	+35°	220°	+40°	40°	-40°	219°	-35°	-----	1.33	1.33		Ted+85
EA	—E—	—E—	36°	-21°	217°	-14°			0.17483113	1.19	1.16		Mag86
R	Concentric ring region ⁶								-----				Ost87
EAM	—E—	—E—	————	————	215°	-17°			0.17483117	1.27	1.35		Dr+88b
EAM	—E—	—E—	35°	-19°	216°	-12°			0.17483106	1.16	1.34		Mag90a
AMF	37°	+0°	217°	+8°	37°	-8°	217°	-0°	-----				Lum+90
AM	33°	+25°	211°	+29°	31°	-29°	213°	-25°	-----	1.39	1.38		Dot+92
EA	—E—	—E—	35°	-27°	215°	-22°			0.17483104	1.35 ²	1.36		DeA93
L	————	————	35°	-9°	216°	-2°			0.17483113	1.2	1.2 ³¹		Ka+02a
Synthesis	—E—	—E—	35°	-18°	216°	-13°			0.1748311	1.3	1.3		Synthesis
17 Thetis													
AM	69°	+43°	268°	+55°	88°	-55°	249°	-43°	-----	1.25	1.35 ¹		Za+86b
EA	Prograde rotation		—E—	—E—					-----				Lag+95
EAM	—E—	—E—	————	————	253°	-33°			0.5112699	1.40	1.40		Mic+95

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	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
18 Melpomene													
EA	—E—	—E—	0°	-0°	341°	-36°			0.482218				Hof+90
19 Fortuna													
I	Prograde rotation								-----				Mor77
I	Prograde rotation								-----				Han77
E	Prograde rotation				—E—	—E—			0.310125				Lup+85
R	Concentric ring region ⁶								-----				Ost87
EAM	65° +48°	————	—E—	—E—					0.3101343	1.24	0.94		Dr+88b
E	70° +50°	250° +50°	—E—	—E—					0.3101342	1.21	1.1		Mag90a
EAM	68° +52°	————	—E—	—E—					0.3101343	1.23	0.93		Dru+91
EA	98° +51°	266° +48°	—E—	—E—					0.3101340	1.27	1.00		DeA95
AM	65° +49°	244° +48°	64° -48°	245° -49°					-----	1.445	1.096		Bla+98
Synthesis	79° +51°	258° +49°	—E—	—E—					0.3101342	1.24	1.0		Synthesis
20 Massalia													
A	10° +78°				190° -78°				-----				Cha+62
AM	30° +49°	207° +51°	27° -51°	210° -49°					-----	1.27	1.0 ¹		Bar+85
A	30° +54°	205° +79°	25° -79°	210° -54°					-----	1.25	2.4 ²		McC+85
E	—E—	—E—							0.337419				Lup+85
EA	20° +80°	200° +80°	—E—	—E—					0.3373993	1.16			Mag86
E	Prograde rotation				—E—	—E—			-----				Kru+92
EA	31° +69°	208° +69°	—E—	—E—					0.3373994	1.27	1.00		Dot+95
E	27° +38°	207° +38°	—E—	—E—					0.3373987				Sza+99
L	10° +45°	189° +45°	————	————					0.33740475	1.1	1.1 ³¹		Ka+02a
Synthesis	23° +59°	203° +60°	—E—	—E—					0.337399	1.15	1.1		Synthesis
21 Lutetia													
E	Prograde rotation				—E—	—E—			0.340277				Lu+87a
AM	42° +40°	223° +48°	43° -48°	222° -40°					-----	1.25	1.09		Lu+87c
EAM	55° +44°	241° +40°	—E—	—E—					0.3400260	1.30	1.7 ²		Mic92
A	48° +31°	233° +38°	53° -38°	228° -31°					-----	1.29	1.25		Dot+92
EAM	33° +9°	214° +15°	—E—	—E—					0.340244	1.25	2.7		Mic93
EA	41° +42°		—E—	—E—					0.3400252	1.41	1.08		DeA95
EA	50° +10°	230° +10°	—E—	—E—					0.340151	1.22	1.4		Lag+95
EAM	————	240° +37°	—E—	—E—					0.3404874	1.26	1.15		Mic96a
E	41° +51°	221° +51°	—E—	—E—					0.3402446				Sza+99
Synthesis	44° +32°	228° +34°	—E—	—E—					0.3404	1.26	1.15		Synthesis

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	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
22 Kalliope														
AM			215° +45°		35° -45°				-----	1.34	1.23		Sca+78	
AM	13° +17°		214° +42°		34° -42°		193° -17°		-----	1.34	1.18		Zap+84	
EAM			199° +14°		19° -11°				0.1728092	1.4	1.18		Mag86	
A			203° +29°		23° -29°				-----	1.33	1.24		Sur+86	
M			201° +22°		21° -22°				-----	1.32	1.13		Sur+86	
EAM	—E—		—E—		—		194° -8°		0.17284164	1.32	1.27		Dr+88b	
EAM					20° -23°		195° +2°		0.1728416	1.6	1.2		Mag90a	
EA	—E—		—E—		18° -23°				0.17284168	1.32	1.18		Mi+90a	
AMF	18° +0°		204° +23°		24° -23°		198° -0°		-----				Lum+90	
EAM	—E—		—E—		—		193° -7°		0.17284164	1.31	1.27		Dru+91	
EA	—E—		—E—		—		190° -1°		0.1728415	1.33	1.27		DeA92	
A	10° +12°		203° +45°		23° -45°		190° -12°		-----	1.32	1.18		Dot+92	
EA	—E—		—E—		—		190° -1°		0.17284154	1.33	1.27		DeA95	
L	—		—		20° -21°		197° +6°		0.17284167	1.2	1.2 ³¹		Ka+02a	
Synthesis	—E—		—E—		21° -22°		193° 0°		0.1728416	1.3	1.2		Synthesis	
23 Thalia														
A D			Solution curve						-----	1.15 ²				Tan+91
EAM	198° +72°		354° +47°		—E—		—E—		0.5133960	1.18	1.45		Mic93	
EA	—E—		—E—		15° -55°		180° -35°		0.513202	1.28			Lag+95	
Synthesis	—E—		—E—		15° -55°		180° -35°		0.513202	1.28			Synthesis	
24 Themis														
AM			274° +52°		94° -52°				-----	1.191	1.148		Bla+98	
26 Proserpina														
AM	47° 0°		227° +4°		47° -4°		227° 0°		-----	1.16	1.40		Bla+00	
28 Bellona														
AM	93° +18°		285° +37°		105° -37°		273° -18°		-----	1.31	1.18		Zap+84	
EAM	73° +17°		265° +43°		—E—		—E—		-----	1.24	1.20		Mic93	
Synthesis	83° +18°		275° +40°		—E—		—E—		-----	1.2	1.2		Synthesis	
29 Amphitrite														
A	165° +45°		345° +45°		165° -45°		345° -45°		-----	1.14	1.0 ¹		Ted+81	
A	160° +53°		320° +45°		140° -45°		340° -53°		-----	1.13	1.00		McC+84	
AM	142° +50°		308° +40°		128° -40°		322° -50°		-----	1.13	1.0 ¹		Zap+84	
EAM	—E—		—E—		135° -15°		320° -25°		0.22458835	1.06	1.06		Mag86	
EAM	—E—		—E—		136° -33°		—		0.2245882	1.13	1.14		Dr+88b	
S	—S—		—S—		134° -36°		—S—		-----	1.22	1.06		Dr+89a	
EAM	—E—		—E—		133° -17°		318° -25°		0.22458829	1.05	1.16		Mag90a	
EA	—E—		—E—		145° -43°		—		0.22458832	1.18	1.00		DeA95	
L	—		—		138° -21°		—		0.22458829	1.1	1.1 ³¹		Ka+02a	
Synthesis	—ES—		—ES—		136° -28°		—S—		0.2245883	1.1	1.1		Synthesis	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
30 Urania													
EAM	114°	+34°	293°	+33°					-----	1.5	1.1		Mic96a
31 Euphrosyne													
AM	186°	+67°	317°	+4°	137°	-4°	6°	-67°	-----	1.12	1.0 ¹		Bar+85
A	178°	+72°	315°	+5°	135°	-5°	358°	-72°	-----	1.12	1.00		McC+85
EAM	—E—		—E—		126°	-31°			0.2316828	1.14	1.59		Mic93
A D	300°	+75°	282°	+30°	102°	-30°	120°	-75°	-----	1.08			Lic+94
EAM	—E—		—E—				273°	-60°	0.2304828	1.09	1.60		Kry+96
Synthesis	—E—		—E—				273°	-60°	0.2304828	1.09	1.60		Synthesis
32 Pomona													
AM	91°	+34°	263°	+46°	83°	-46°	271°	-34°	-----	1.34	1.0 ¹		Za+86b
EA	103°	+59°	267°	+70°	—E—		—E—		0.393652	1.4			Eri+93
EA	83°	+33°	253°	+43°	—E—		—E—		-----	1.76	1.00		DeA95
EA	89°	+43°	260°	+57°	—E—		—E—		0.393654	1.40	1.00		Dot+95
L			267°	+58°					0.39365287	1.3	1.3 ³¹		Ka+02a
Synthesis	92°	+45°	262°	+58°	—E—		—E—		0.393653				Synthesis
34 Circe													
AM	113°	+17°					293°	-17°	-----	1.32	1.00		Bla+00
36 Atalante													
AM			299°	+19°	119°	-19°			-----	1.282	1.000		Bla+98
37 Fides													
EA	100°	+5°	280°	-5°					0.305573	1.2			Mag86
39 Laetitia													
EA	—E—						280°	-66°	0.2144712		shape ⁹		Cai56
A	114°	+28°					294°	-28°	-----				HG+58
EA	—E—						283°	-61°	0.2144712	1.7	3.3		Cai60
AM	130°	+10°					310°	-10°	-----				Geh+62
M	121°	+37°					301°	-37°	-----	1.64	1.80		Sat76
A	128°	+38°	339°	+48°	159°	-48°	308°	-38°	-----	1.53	1.31 ²		McC+84
AM	116°	+49°	338°	+57°	158°	-57°	296°	-49°	-----	1.58	2.08		Zap+84
A	111°	+56°	365°	+70°	185°	-70°	291°	-56°	-----	1.53	3.1 ²		McC+85
E	Prograde rotation				—E—		—E—		0.21409				Lup+85
EAM	129°	+30°	324°	+35°	—E—		—E—		0.21409332	1.49	1.49		Mag86
EAM			318°	+26°	—E—		—E—		0.21409327	1.45	1.48		Dr+88b
EAM	130°	+29°	325°	+37°	—E—		—E—		0.21409333	1.50	1.50		Mag90a
AMF	125°	+19°	317°	+26°	137°	-26°	305°	-19°	-----				Lum+90
EAM			319°	+28°	—E—		—E—		0.21409330	1.49	1.48		Dru+91
AMF			327°	+36°	147°	-36°			-----			X ¹⁶	Lum+91
EA			325°	+23°	—E—		—E—		0.21409327	1.42	1.10		DeA95
L			323°	+35°					0.21409321	1.4	1.4 ³¹		Ka+02a
Synthesis			324°	+31°	—E—		—E—		0.2140932	1.4			Synthesis

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code	
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
40 Harmonia														
A D	Solution curve								-----	1.31 ²			Tan+91	
EAM	-----		208° +21°	—E—	—E—				0.3712522	1.24	2.07		Mic93	
EAM	22° +28°		203 + 38°	°	-----	-----			0.3711872	1.31	1		LGR99	
EAM	12° +34°		201° +41°	-----	-----				0.3712535	1.31	1		LGR99	
Synthesis	17° +31°		204° +33°	-----	-----				0.37123	1.3			Synthesis	
41 Daphne														
AM	15° +36°		157° +28°	195° -36°	337° -28°				-----	1.51	1.00		Bar83	
AM	19° +35°		159° +32°	199° -35°	339° -32°				-----	1.44	1.0 ¹		Bar+85	
EA	—E—		—E—	186° -40°	335° -33°				0.2495001	1.30	1.0		Mag86	
AM	18° +48°		135° +43°	198° -48°	315° -43°				-----	1.31	1.16		Za+86b	
R			Concentric ring region ⁶							-----				Ost87
EAM	—E—		—E—	-----	334° -32°				0.2494996	1.28	1.23		Dr+88b	
EA	—E—		—E—	197° -36°	344° -38°				0.2494994	1.28	1.00		Mag90a	
EAM	—E—		—E—	-----	340° -32°				0.2494993	1.25	1.19		Dru+91	
EA	—E—		—E—	190° -27°	343° -31°				0.24949931	1.37	1.00		DeA95	
L	-----		-----	196° -31°	-----				0.2494993	shape ³¹			Ka+02	
Synthesis	—E—		—E—	194° -31°	342° -34°				0.2494994	1.3 1.1			Synthesis	
42 Isis														
AM			302° +36°	122° -36°					-----	1.419	1.000		Bla+98	
EAM	—E—		—E—	117° -5°	288° -16°				0.5665417				Den+98	
43 Ariadne														
A	73° +40°		249° +43°	69° -43°	253° -40°				-----	1.69	1.8 ²		McC+84	
AM	73° +25°		248° +20°	68° -20°	253° -25°				-----	1.79	1.10		Bar+86	
E	—E—		—E—	55° -16°	241° -21°				0.2400784				Mic88	
EAM	78° +13°		256° +13°	—E—	—E—				0.2400924	1.40	1.10		Dr+88b	
EA	—E—		—E—	68° -14°	251° -16°				0.2400828	1.76	1.01		Mag90a	
EAM	—E—		—E—	-----	248° -10°				0.2400830	1.60	1.24		Dru+91	
EA	—E—		—E—	-----	249° -14°				0.2400817	1.59	1.10		DeA92	
E	—E—		—E—	Retrograde rotation						-----				Kru+92
AMD	72° +13°		250° +8°	70° -8°	252° -13°				-----	1.84	1.52		Det+92 ²⁵	
EAMD			250° +1°	70° -1°					-----	1.0 ¹	1.0 ¹	X ¹⁵	Det+92 ²⁵	
EAMD	73° +25°		248° +20°	68° -20°	253° -25°				-----	shape ¹⁴			Det+92 ²⁵	
EAMD	70° +5°				250° -5°				-----	shape ¹⁴			Det+92 ²⁵	
E	—E—		—E—	70° -22°	254° -24°				0.24008258				Det+92 ²⁵	
EAM	—E—		—E—	68° -22°	253° -28°				0.2400824	1.64	1.16		Mic93	
EA	—E—		—E—	-----	249° -14°				0.2400817	1.59	1.10		DeA95	
EA	—E—		—E—	-----	251° -9°				0.2400824	1.68	1.10		Dot+95	
E	—E—		—E—	71° -25°	251° -25°				0.2400818				Sza+99	
L	-----		-----	-----	253° -15°				0.24008275	1.6	1.2 ³¹		Ka+02a	
Synthesis	—E—		—E—	-----	252° -16°				0.240082	1.6	1.1		Synthesis	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
44 Nysa													
EA			—E—		178°	−84°			0.26737846		shape ⁹		Cai56
AM	105°	+30°						285°	−30°	-----			Geh+62
EA			358°	+84°	—E—				0.26730938				Cha+62
AM	100°	+50°						280°	−50°	-----	1.58	1.30	Zap+79
E	100°	+60°	265°	+55°	—E—			—E—	0.26755902				Tay+83
EA	94°	+59°	288°	+63°	—E—			—E—	0.26755895				Mag83
AM	99°	+49°	295°	+54°	115°	−54°	279°	−49°	-----	1.51	1.18		Zap+84
EAM	105°	+57°	300°	+61°	—E—			—E—	0.26755902	1.37	1.4		Mag86
AMF	112°	+46°	304°	+47°	124°	−47°	292°	−46°	-----				Lum+90
EA	92°	+47°	283°	+49°	—E—			—E—	0.26755903	1.44	1.13		DeA93
L	98°	+58°							0.26755904		shape ³¹		Ka+02
Synthesis	100°	+53°	296°	+52°	—E—			—E—	0.26755903	1.44			Synthesis
45 Eugenia													
E	—E—		—E—		115°	−34°	286°	−26°	0.2374645				Tay+88
EAM	—E—		—E—		127°	−44°			0.2374646	1.33	1.65		Dr+88b
EAM	—E—		—E—		125°	−35°	296°	−26°	0.2374646	1.36	1.48		Mag90a
AMF	128°	+16°	313°	+25°	133°	−25°	308°	−16°	-----				Lum+90
A D			Solution curve						-----	1.42 ²			Tan+91
EA	—E—		—E—		109°	−27°			0.2374650	1.33	1.23		DeA95
EA			check ⁵						-----				Lag+95
EAM					106°	−42°	313°	−41°	0.2374644	1.33	1.4		LGR99
L					124°	−30°			0.23746429	1.4	1.5 ³¹		Ka+02a
Synthesis	—E—		—E—		119°	−34°	301°	−27°	0.2374647	1.36			Synthesis
47 Aglaja													
EAM	139°	+33°	313°	+19°	—E—		—E—		0.549549	1.21	1.20		Mic96a
48 Doris													
AM	113°	+27°					293°	−27°	-----	1.445	1.000		Bla+98
51 Nemausa													
E F	—E—		—E—		133°	−61°		? ⁴	0.324368				Kri91
E F	—E—		—E—		166°	−62°		? ⁴	-----				Kri92
EA	176°	+62°					356°	−62°	-----	1.15	1.00		DeA95
F					160°	−68°			0.3242890				Kri97
52 Europa													
A	0°	+37°	203°	+38°	23°	−38°	180°	−37°	-----	1.12	1.0 ¹		Bar+86
EAM	17°	+65°			—E—		—E—		-----	1.11	2.79		Mic93
EA	—E—		—E—		80°	−55°	250°	−40°	0.2346504	1.21	1.30		Dot+95
EAM	—E—		—E—		84°	−32°	257°	−18°	0.2347019	1.20	1.17		Mic+95
EAM	63°	+46°	261°	+60°					0.2345855	1.19	2.2		LGR99
L					79°	−57°	246°	−44°	0.23465042	1.2	1.2 ³¹		Ka+02a
EAM	71°	+31°	262°	+46°					0.2345813	1.21	1.04		Mic+03
54 Alexandra													
A D			Solution curve						-----	1.3 ²			Tan+91
EA	160°	+45°	290°	+55°	—E—		—E—		0.292766				Bel+93

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
55 Pandora													
AM	36° +32°	226° +19°	46° -19°	216° -32°	-----				1.27	1.10		Za+86b	
EAM	—E—	—E—	————	202° -26°	0.2001593				1.76	1.52		Dr+88b	
EAM	32° +40°	224° +32°	—E—	—E—	0.2001596				1.34	1.47		Dru+91	
EAM	————	239° +28°	—E—	—E—	0.2001595				1.29	1.32		Mic93	
EA	—E—	—E—	50° -18°	216° -34°	0.2001603				1.29	1.25		DeA95	
EA	25° +30°	220° +30°	—E—	—E—	0.2001686				1.29	1.1		Lag+95	
EAM	28° +48°	232° +42°	—E—	—E—	0.2001685				1.32	1.25		Mic96a	
60 Echo													
EAM	95° +34°	275° +42°	—E—	—E—	1.048226				1.50 ²	1.38		Mic93	
63 Ausonia													
AM	130°	310°	130°	310°	-----				2.4	1.0		Zap+83	
AM	127° +38°	298° +28°	118° -28°	307° -38°	-----				2.25	1.0 ¹		Zap+84	
EAM	—E—	—E—	120° -30°	305° -30°	0.3873987				2.06	1.04		Mag86	
E	—E—	—E—			0.387230							Lu+87a	
EA	—E—	—E—		313° -42°	0.3873992				2.16	1.04		DeA95	
EAM	—E—	—E—	122° -26°	310° -40°	0.3874027				2.08	1.05		Mic96a	
AM		305° +36°	125° -36°		-----				2.39	1.00		Bla+00	
Synthesis	—E—	—E—	120° -29°	309° -38°	0.3874027				2.1	1.0		Synthesis	
64 Angelina													
EAM	119° +29°	299° +27°	—E—	—E—	0.3647784				1.38	1.05		Mic93	
65 Cybele													
EAM	—E—	—E—	26° -52°	————	0.1661266				1.08	1.74		Dr+88b	
EAM	—E—	—E—	25° -49°	————	0.1683549				1.09	1.69		Dru+91	
EA	—E—	—E—	34° -23°		0.1683552				1.05	1.37		DeA95	
Synthesis	—E—	—E—	28° -41°		0.1683551				1.07			Synthesis	
66 Maja													
AM		345° +50°	165° -50°		-----				1.660	1.000		Bla+98	
AM	156° +62°			336° -62°	-----				1.66	1.40		Bla+00	
69 Hesperia													
E	131° +42°	315° +59°	—E—	—E—	0.2358226							Ve+89b	
E			—E—	—E—	-----							Kru+92	
EA		243° +51°	—E—	—E—	0.2356040				1.25	1.45		DeA+95	
AM	64° +39°	250° +42°	70° -42°	244° -39°	-----				1.247	1.250		Bla+98	
Synthesis		260° +50°	—E—	—E—	0.2356040				1.25	1.45		Synthesis	
71 Niobe													
AM		274° +14°	94° -14°		-----				1.202	1.345		Bla+98	
77 Frigga													
AM	57° +39°			236° -40°	-----				1.224	1.010		Bla+98	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
79 Eurynome													
EA	64° +45°	226° +52°	—E—	—E—	—E—	—E—	—E—	—E—	0.2490706	1.28	2.0 ²		Mi+90a ²⁴
EA	62° +26°	226° +41°	—E—	—E—	—E—	—E—	—E—	—E—	0.2490708	1.24	1.20		DeA93
EA	56° +28°	236° +38°	—E—	—E—	—E—	—E—	—E—	—E—	0.2490705	1.25	1.42		DeA+95
EAM	40° +35°	214° +38°	—E—	—E—	—E—	—E—	—E—	—E—	0.2490716	1.22	1.22		Mic96a
E	—E—	—E—	65° -36°	245° -36°	—E—	—E—	—E—	—E—	0.2490706				Sza+99
Synthesis	61° +33°	229° +44°	—E—	—E—	—E—	—E—	—E—	—E—	0.2490707	1.26			Synthesis
80 Sappho													
R		Concentric ring region ⁶							-----				Ost87
83 Beatrix													
EAM	—E—	—E—	3° -37°	172° -31°	—E—	—E—	—E—	—E—	0.4213796	1.26	1.16		Kru+94
EA	—E—	—E—	6° -46°	173° -38°	—E—	—E—	—E—	—E—	-----	1.22	1.10		DeA95
Synthesis	—E—	—E—	4° -42°	172° -34°	—E—	—E—	—E—	—E—	-----	1.24	1.1		Synthesis
85 Io													
EA	120° +89°	303° +82°	123° -82°	300° -89°	—E—	—E—	—E—	—E—	-----	1.18	1.00		Dot+95
EAM ³²	—E—	—E—	—E—	285° -52°	—E—	—E—	—E—	—E—	0.28646325	1.15	1.8		Eri+99
EAM ³²	—E—	—E—	108° -46°	290° -16°	—E—	—E—	—E—	—E—	0.2864629	1.19			Eri+99
Synthesis	—E—	—E—	—E—	285° -52°	—E—	—E—	—E—	—E—	0.28646325	1.15	1.8		Synthesis
87 Sylvia													
EAM	89° +52°	288° +40°	—E—	—E—	—E—	—E—	—E—	—E—	0.2159852	1.41	1.17		Dr+88b
EAM	66° +67°	296° +59°	—E—	—E—	—E—	—E—	—E—	—E—	0.2159851	1.44	1.5		Mag90a
EAM	89° +52°	291° +42°	—E—	—E—	—E—	—E—	—E—	—E—	0.2159853	1.43	1.17		Dru+91
EAM	84° +55°	297° +50°	—E—	—E—	—E—	—E—	—E—	—E—	0.2159859	1.37	1.41 ²		Mic93
EA	86° +45°	—	—E—	—E—	—E—	—E—	—E—	—E—	0.2159850	1.45	1.05		DeA95
L	71° +66°	—	—	—	—	—	—	—	0.21598508	1.4	1.1 ³¹		Ka+02a
Synthesis	82° +55°	—	—E—	—E—	—E—	—E—	—E—	—E—	0.2159853	1.42			Synthesis
88 Thisbe													
AM	32° +69°	205° +54°	25° -54°	212° -69°	—E—	—E—	—E—	—E—	-----	1.13	1.0 ¹		Za+86b
EAM	—	129° +78°	—E—	—E—	—E—	—E—	—E—	—E—	0.2517222	1.12	1.30		Dr+88b
EA	40° +70°	200° +70°	—E—	—E—	—E—	—E—	—E—	—E—	0.2517223	1.13			Mag90a
EAM	—	110° +58°	—E—	—E—	—E—	—E—	—E—	—E—	0.2517222	1.15	1.16		Dru+91
EA	—	243° +74°	—E—	—E—	—E—	—E—	—E—	—E—	0.2517224	1.11	1.22		DeA95
Synthesis	—	180° +67°	—E—	—E—	—E—	—E—	—E—	—E—	0.2517223	1.13	1.2		Synthesis
107 Camilla													
EAM	71° +61°	233° +74°	—E—	—E—	—E—	—E—	—E—	—E—	0.2018306	1.45	1.72		Dr+88b
EAM	74° +55°	239° +76°	—E—	—E—	—E—	—E—	—E—	—E—	0.2018305	1.46	1.6		Mag90a
EAM	—	229° +73°	—E—	—E—	—E—	—E—	—E—	—E—	0.2018305	1.47	1.49		Dru+91
EA	—	230° +69°	—E—	—E—	—E—	—E—	—E—	—E—	0.2018307	1.46	1.58		DeA95
Synthesis	72° +58°	232° +72°	—E—	—E—	—E—	—E—	—E—	—E—	0.2018306	1.46	1.6		Synthesis

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
108 Hecuba													
AM	79°	+13°					259°	-13°	-----	1.180	1.101		Bla+98
AM	79°	+6°					259°	-6°	-----	1.180	1.101		Bla+98
110 Lydia													
EAM	24°	+75°	210°	+78°					-----	1.17			Mic96a
115 Thyra													
EA	175°	+60°	330°	+60°	—E—	—E—			0.301565	1.14	1.30		Dot+95
AM	197°	+30°	358°	+35°	17°	-30°	178°	-35°	-----	1.224	1.088		Bla+98
EAM							182°	-43°	0.3017940	1.21	1.03		
Synthesis							180°	-40°	0.3017940	1.2	1		Synthesis
121 Hermione													
EA	163°	+12°	342°	+30°	162°	-30°	343°	-12°	-----	1.10	1.00		DeA95
AM	40°	+32°					220°	-32°	-----	1.294	1.288		Bla+96
AM			240°	+42°	60°	-42°			-----	1.294	1.393		Bla+98
125 Liberatrix													
EAM	80°	+74°			—E—	—E—			0.1653422	1.28	2.68		Dr+88b
E		+70°		+70°	—E—	—E—			0.1653425				Mag90a
EAM			228°	+71°	—E—	—E—			0.1653420	1.35	1.23		Dru+91
EA	15°	+47°	181°	+53°	—E—	—E—			0.1653418	1.55	1.10		DeA95
Synthesis	48°	+64°	205°	+65°	—E—	—E—			0.1653422				Synthesis
129 Antigone													
AM	331°	+30°	133°	+48°	313°	-48°	151°	-30°	-----	1.37	1.0 ¹		Bar+85
EA	20°	+50°	180°	+72°	—E—	—E—			0.2065566	1.27	1.0		Mag86
EAM			196°	+64°	—E—	—E—			0.2065486	1.27	1.05		Dr+88b
EA	38°	+27°	202°	+53°	—E—	—E—			0.2065485	1.32	1.02		Mag90a
EAM			195°	+65°	—E—	—E—			0.2065486	1.23	1.07		Dru+91
AM	42°	+36°	208°	+68°	18°	-68°	222°	-36°	-----	1.45	1.05		Dot+92
EA			194°	+72°	—E—	—E—			0.2065483	1.32	1.01		DeA95
Synthesis	40°	+32°	200°	+68°	—E—	—E—			0.2065484	1.3	1.04		Synthesis
130 Elektra													
EAM	—E—		—E—		190°	-81°			0.2176951	1.29	1.63		Dr+88b
EAM	—E—		—E—		180°	-85°	240°	-40°	0.2176942	1.41	1.2		Mag90a
EAM	—E—		—E—		344°	-86°	246°	-32°	0.2176942	1.32	1.06		Mic93
EA	—E—		—E—		192°	-83°			0.2176950	1.55	1.45		DeA95
Synthesis	—E—		—E—		190°	-80°	243°	-36°	0.2176946	1.4			Synthesis
133 Cyrene													
E			Prograde rotation		—E—	—E—			0.5295				Har+84

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code	
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
135 Hertha														
A D	Solution curve								-----	1.23			Tan+91	
AM	135° +46°		310° +43°		130° -43°		315° -46°		-----	1.34	1.22		Dot+92 ²²	
EAM	—E—		—E—		126° -28°		310° -31°		0.347818	1.36	1.20		Mic93	
EA	106° +2°						286° -2°		0.350238	1.16	1.14		Lag+95	
EAM	118° +52°		291° +47°						-----	1.25	1.24		Mic96a	
Synthesis	106° +2°						286° -2°		0.350238	1.16	1.14		Synthesis	
137 Meliboea														
AM	149° +8°						329° -8°		-----	1.18	1.11		Bla+00	
139 Juewa														
EAM	117° +50°		————		—E—		—E—		-----	1.21	1.68		Mic93	
144 Vibilia														
R			Concentric ring region ⁶						-----					Ost87
150 Nuwa														
AM			253° +1°		73° -1°				-----	1.116	1.043		Bla+96	
AM			257° +1°		77° -1°				-----	1.097	1.015		Bla+98	
AM			253° +27°		73° -27°				-----	1.097	1.015		Bla+98	
158 Koronis														
EAM	————		————		19° -69°		201° -72°		0.5919043	1.5	1.7		Sli+03	
L	————		————		35° -65°		220° -68°		0.5919038	1.4	1.5		Sli+03	
Synthesis	————		————		27° -67°		211° -70°		0.5919042				Synthesis	
161 Athor														
AM	1° +48°		209° +47°		29° -47°		181° -48°		-----	1.367	0.850		Bla+98	
165 Loreley														
AM			339° +65°		159° -65°				-----	1.191	1.274		Bla+98	
167 Urda														
EAM	————		————		30° -73°		220° -69°		0.5442240	1.3	1.0		Sli+03	
L	————		————		40° -75°		225° -73°		0.5442238	1.2	1.0		Sli+03	
Synthesis	————		————		39° -74°		225° -71°		0.5442242				Synthesis	
173 Ino														
EAM	—E—		—E—		198° -21°		356° -47°		-----	1.23	1.69		Mic93	
EA	—E—		—E—		186° -22°		365° -21°		-----	1.12	1.06		DeA95	
Synthesis	—E—		—E—		192° -22°		360° -34°		-----	1.2			Synthesis	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
176 Iduna													
AM	85°	+36°			265°	-36°			-----	1.39	1.28		Bla+00
192 Nausikaa													
A	130°	+40°			310°	-40°			-----				Sc+76a
EA	—E—	—E—	—	—	325°	-45°			0.567670	1.35	1.50		Dot+95
L	131°	+36°	—	—	306°	-7°			0.5676058	1.3	1.1 ³¹		Ka+02a
196 Philomela													
EAM	78°	+26°	266°	+24°	86°	-24°	258°	-26°	-----	1.58	1.06		Mic92
EAM	—E—	—E—	—E—	—	99°	-16°	273°	-22°	-----	1.33	1.17		Mic93
A D	102°	+26°	287°	+26°	107°	-26°	282°	-26°	-----	1.50			Lic+94
EA	105°	+20°					285°	-20°	-----	1.40	1.00		DeA95
EAM	—	—	277°	+20°	—E—	—E—			0.3475556 ²	1.32	1.16		Kry+96
AM			278°	+20°	98°	-20°			-----	1.472	0.914		Bla+98
Synthesis	—	—	277°	+20°	—E—	—E—			0.3475556	1.3	1.2		Synthesis
201 Penelope													
EAM	78°	-3°	258°	+4°					0.1561283 ²	1.47	1.22		Dr+88b
EAM	—E—	—E—	—E—	—	80°	-35°	260°	-25°	0.1561443	1.50	1.23		Mag90a
EAM	74°	-2°	—	—					0.1561287	1.53	1.24		Dru+91
EAM					—	—	261°	-34°	0.1561440	1.55	1.34		Dru+91
EAM	—E—	—E—	—E—	—	85°	-40°	260°	-25°	0.1561439	1.42	1.3		Eri+93
EAM	—E—	—E—	—E—	—			258°	-22°	0.1561433	1.32	1.06		Mic93
EA	—E—	—E—	—E—	—	93°	-14°			0.15614438	1.65	1.20		DeA95
EAM	—E—	—E—	—E—	—	84°	-39°	260°	-20°	0.1561439	1.49	1.20		Mic96a
Synthesis	—E—	—E—	—E—	—	83°	-38°	260°	-25°	0.1561439	1.5	1.2		Synthesis
208 Lacrimosa													
EAM	—	—	—	—	154°	-62°	342°	-64°	0.5865383	1.5	2.3		Sli+03
L	—	—	—	—	170°	-68°	350°	-71°	0.5865383	1.2	1.2		Sli+03
Synthesis	—	—	—	—	162°	-65°	346°	-68°	0.5865383				Synthesis
216 Kleopatra													
EA	71°	+21°	234°	+38°	—E—	—E—			0.2243864				Mag83
A	67°	+15°	231°	+31°	51°	-31°	247°	-15°	-----	2.83			Zap+84
E	71°	+21°	234°	+38°	—E—	—E—			-----				Kos86
EA	72°	+20°	235°	+34°	—E—	—E—			0.2243865	2.78	1.5 ²		Mag86
E					—E—	—E—			0.22438596				Lu+87a
EAM	69°	+10°	—	—	—E—	—E—			0.2243870	2.54	1.32		Dr+88b
EAM	71°	+19°	236°	+34°	—E—	—E—			0.2243868	2.71	1.30		Mag90a
EAM	69°	+10°	—	—	—E—	—E—			0.2243868	2.56	1.33		Dru+91
AM	78°	+25°	229°	+45°	49°	-45°	258°	-25°	-----	2.80	1.36		Dot+92
EA	72°	+8°	—	—	—E—	—E—			0.22438654	2.54	1.20		DeA95
Synthesis	72°	+16°	232°	+37°	—E—	—E—			0.2243867	2.6	1.3		Synthesis
218 Bianca													
EAM			340°	+60°					-----	1.20	1.33		Kry+96

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
287 Nephthys													
AM	99°	+54°			279°	-54°			-----	1.306	1.207		Bla+96 ³⁴
291 Alice													
EAM	66°	+54°	247°	+55°					-----	1.30	1.20		Kry+96
311 Claudia													
EAM	24°	+31°	207°	+38°	-----	-----			0.3138073	1.9	0.9		Sli+03
L	24°	+48°	209°	+48°	-----	-----			0.3138078	1.7	1.2		Sli+03
Synthesis	24°	+40°	209°	+43°	-----	-----			0.3138075				Synthesis
321 Florentina													
EAM	-----	-----	96°	-63°	266°	-67°			0.11961940	1.5	1.6		Sli+03
L	-----	-----	91°	-60°	264°	-63°			0.11961941	1.4	1.4		Sli+03
Synthesis	-----	-----	94°	-62°	265°	-65°			0.11961941				Synthesis
334 Chicago													
EAM	13°	+32°	188°	+42°	—E—	—E—			0.383246	1.68	1.06		Mic93
AM	18°	+46°	180°	+59°	0°	-59°	198°	-46°	-----	2.089	1.742		Bla+98
Synthesis	15°	+35°	184°	+50°	—E—	—E—			0.383246	1.88			Synthesis
335 Roberta													
AM	80°	+15°	258°	+25°	78°	-25°	260°	-15°	-----	2.09	1.14		Bla+00
337 Devosa													
EAM	—E—	—E—	-----	-----	199°	-51°			0.1938078	1.24	1.34		Mic92
EAM	-----	-----	199°	+59°	—E—	—E—			0.1931106	1.20	1.79		Mic93
EA	—E—	—E—	-----	-----	193°	-73°			0.1938078	1.30	1.30		DeA95
Synthesis	—E—	—E—	-----	-----	195°	-62°			0.1938078	1.25	1.56		Synthesis
338 Budrosa													
A	152°	+24°	321°	+33°	141°	-33°	332°	-24°	-----	1.5			GiH+95
349 Dembowska													
E	150°	+25°	330°	+5°	—E—	—E—			0.1958834	<1.3			Mag86
AM	163°	+49°	330°	+29°	150°	-29°	343°	-49°	-----	1.28	1.15		Za+86b
E	-----	-----	-----	-----	—E—	—E—			0.195895				Lu+87a
EAM	153°	+35°	-----	-----	—E—	—E—			0.19588337	1.30	1.12		Dr+88b
EAM	157°	+30°	331°	+15°	—E—	—E—			0.1958835	1.29	1.11		Mag90a
AMF	148°	+35°	180°	+28°	0°	-28°	328°	-35°	-----				Lum+90
EAM	153°	+36°	-----	-----	—E—	—E—			0.19588333	1.30	1.13		Dru+91
EA	152°	+40°	-----	-----	—E—	—E—			0.1958841	1.35	1.10		DeA95
Synthesis	153°	+36°	331°	+22°	—E—	—E—			0.1958836	1.31	1.12		Synthesis
352 Gisela													
AM			213°	+53°	33°	-53°			-----	1.47	1.38		Bla+00

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code	
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
354 Eleonora														
EA			360° +35°	—E—					-----				Lup+81	
A	132° +45°		357° +38°	177° -38°	312° -45°				-----	1.36	1.0 ¹		Zap+84	
A	137° +44°		363° +28°	183° -28°	317° -44°				-----	1.35	1.0 ¹		Bur+85	
A			355° +36°	175° -36°					-----				Pii+85	
EA	159° +22°		339° +2°	—E—	—E—				0.1782160	1.23	1.0		Mag86	
EAM	170° +39°		366° +2°	—E—	—E—				0.17821593	1.17	1.24		Dr+88b	
EAM	148° +35°		350° +21°	—E—	—E—				0.1782161	1.21	1.11		Mag90a	
EAM	————		364° +9°	—E—	—E—				0.17821596	1.17	1.20		Dru+91	
EA			365° +22°	—E—	—E—				0.1782158	1.26	1.00		DeA95	
L ³²	————		356° +20°	————	————				0.17821583	1.2	1.1 ³¹		Ka+02a	
Synthesis	————		360° +18°	—E—	—E—				0.1782159	1.21	1.1		Synthesis	
356 Liguria														
R			Concentric ring region ⁶							-----				Ost87
360 Carlova														
EA	108° +51°		337° +47°	157° -47°	288° -51°				-----	1.57	1.00		Dot+95	
EAM ³²	105° +47°		————	—E—	—E—				0.2578997	1.42	1.52		Mic+00	
Synthesis	106° +48°		————	—E—	—E—				0.2578997	1.45			Synthesis	
372 Palma														
AM	44° +78°		241° +7°	61° -7°	224° -78°				-----	1.202	1.066		Bla+98	
376 Geometria														
EAM	50° +36°		230° +38°						-----	1.35	1.70		Kry+96	
377 Campania														
AM	86° +3°		266° 0°	86° 0°	266° -3°				-----	1.318	0.898		Bla+96 ³⁴	
382 Dodona														
EAM ³²	88° +68°		————	————	————				0.17138450	1.54	1.33		Mic+03	
386 Siegena														
AM	56° +14°				236° -14°				-----	1.116	0.776		Bla+98	
389 Industria														
EAM	—E—		—E—	98° -55°	314° -50°				-----	1.26	1.38		Mic93	
AM			307° +52°	127° -52°					-----	1.393	1.245		Bla+98	
Synthesis	—E—		—E—	110° -54°	314° -50°				-----	1.33	1.31		Synthesis	
409 Aspasia														
AM	73° +48°		216° +35°	36° -35°	253° -48°				-----	1.137	1.080		Bla+98	
416 Vaticana														
EAM ³²	132° +58°		310° +22°	—E—	—E—				0.2238486	1.50 ²	1.19 ²		Mic+00	
419 Aurelia														
AM			192° +34°	13° -34°					-----	1.28	1.16		Bla+00	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
423 Diotima													
AM	170° +63°		345° +31°		165° -31°		350° -63°		-----	1.14	1.50		Za+86b
EA	140° +55°		-----		—E—		—E—		0.1989448	1.16	1.05		Dot+95
Synthesis	155° +59°		-----		—E—		—E—		0.1989448	1.15	1.26		Synthesis
432 Pythia													
AM	121° +65°						301° -65°		-----	1.37	1.27		Bla+00
433 Eros													
V	29° +22°				—V—				-----				Zes32
A	4° +45°				184° -45°				-----				Ros32
AM	2° +53°				182° -53°				-----	1.79	1.18		Kru+36
V A			—V—		169° -62°				-----				Wat37
VEA			moving ³		—E—				0.2195937				Sto40
EA	-7° +13°				—E—				0.21959390				Bey53
EA	10° +46°				—E—				0.21959386	4.0	1.0 ¹		Cai56
E	13° +28°				—E—				-----				Ves71
A	17° +10°								0.21959				Sc+76b
A	15° +9°								-----	2.3			Mi+76
E	16° +12°				—E—				0.219599	shape ⁸			Dun76
A	moving ³								-----	4.0	1.25		Che+77
AM	15° +20°								-----	2.33	1.00		Lum+81
S	23° +37°				—S—				-----	2.79	1.03		Dr+85a
E	22° +9°				—E—				0.219588				Tay85
E	16° +6°				—E—				-----				Kos86
A					check ⁵				-----				Mi+90b
E									0.219593957				Mag90b
C	19° +14°		-----		-----		-----		-----	shape ¹⁰			Th+00
L	16° +9°		-----		-----		-----		0.21959387	shape ³¹			Ka+01
C ^{32, 33}	17° +11°		-----		-----		-----		0.21959273	shape ¹⁰			Mill+02
Synthesis	17° +11°				—ES—				0.219593				Synthesis
451 Patientia													
AM	153° +67°		345° +25°		165° -25°		333° -67°		-----	1.07	1.0		Za+86b
471 Papagena													
AM	21° +31°						201° -31°		-----	1.25	1.38		Bla+00
495 Eulalia													
Z			224° +2°		44° -2°				-----				Bin87
505 Cava													
Z	113° +4°						293° -10°		-----				You+85
EAM	138° +40°		325° +27°						-----	1.22	1.20		Mic96a

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code	
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
511 Davida														
AM	122°	+10°					302°	-10°	-----				Geh+62	
A	-----		306°	+34°	126°	-34°	-----		-----				Cha+63	
E			285°	+45°	—E—				-----				Ves+85	
AM	92°	+33°	303°	+34°	123°	-34°	272°	-33°	-----	1.19	1.13		Za+86a	
S	—S—		291°	+37°	—S—		—S—		-----	1.30	1.4		Dru+86	
AM			307°	+32°	127°	-32°			-----	1.25	1.14		Dru+86	
EAM	-----		300°	+32°	—E—		—E—		0.21372345	1.25	1.16		Dr+88b	
EAM	99°	+26°	299°	+26°	—E—		—E—		0.21372348	1.22	1.13		Mag90a	
EAM	-----		300°	+32°	—E—		—E—		0.21372345	1.25	1.16		Dru+91	
EAM	96°	+32°	303°	+31°	—E—		—E—		0.2137234	1.23	1.12		Mic93	
EA			298°	+22°	—E—		—E—		0.21372354	1.24	1.06		DeA95	
EA					check ⁵				-----				Lag+95	
Synthesis	—S—		300°	+27°	—E—		—E—		0.21372347	1.24	1.12		Synthesis	
516 Amherstia														
EA	75°	+63°	256°	+55°	76°	-55°	255°	-63°	-----	1.82	1.85		DeA95	
EAM	76°	+30°							-----	1.53	1.23		Mic96a	
EAM ³²	75°	+17°					225°	-17°	0.3116333 ²	1.36	1.82		Mic+00	
532 Herculina														
S							132°	-59°	-----	1.21	1.01		Dr+85b	
E					96°	-1°			0.3918711	1.0 ¹	1.0 ¹	X ¹⁹	Tay+87	
EAM			284°	+34°					0.3918764	1.13	1.05		Kwi+92	
EA					87°	-7°			0.3918710	1.24	1.06		DeA95	
EAM	-----		291°	+18°	—E—		—E—		0.3918720	1.21	1.13		Mic+95	
A ²⁸			295°	+18°					-----	1.21	1.20		Mic96b	
E	91°	+21°	271°	+21°	—E—		—E—		0.3918712				Sza+99	
L	-----		289°	+10°	-----		-----		0.39187296	1.1	1.2 ³¹		Ka+02a	
Synthesis	-----		287°	+17°	-----		-----		0.391872	1.2	1.2		Synthesis	
534 Nassovia														
EAM	52°	+42°	238°	+47°	-----		-----		0.3945380	1.4	1.5		Sli+03	
L	58°	+50°	244°	+51°	-----		-----		0.3945400	1.3	1.4		Sli+03	
Synthesis	55°	+46°	241°	+49°	-----		-----		0.3945392				Synthesis	
537 Pauly														
AM			290°	+40°	110°	-40°			-----	1.25	1.88		Bla+00	
554 Perago														
R			Concentric ring region ⁶							-----				Ost87
579 Sidonia														
Z	96°	+7°					276°	-7°	-----				Bin87	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code	
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c			
584 Semiramis														
EAM	—E—	—E—	—	—	327°	−55°	—	—	0.2112053	1.19	1.28	—	Dr+88b	
EAM	—E—	—E—	110°	−40°	320°	−30°	—	—	0.211206	1.17	1.1	—	Mag90a	
EAM	—E—	—E—	112°	−51°	—	—	—	—	0.2112062	1.36	1.34	—	Mic93	
EA	—E—	—E—	122°	−56°	315°	−43°	—	—	0.2112060	1.27	1.14 ²	—	DeA95	
EAM	—E—	—E—	—	—	334°	−51°	—	—	0.2112061	1.25	1.12	—	Mic96a	
Synthesis	—E—	—E—	—	—	335°	−50°	—	—	0.2112061	1.25	1.12	—	Synthesis	
624 Hektor														
E	—	—	324°	+10°	—E—	—E—	—	—	0.28843884	shape ⁸		—	Dun+69	
A	—	—	313°	+11°	133°	−11°	—	—	-----	2.00	2.63 ¹¹	—	Pou81	
A	—	—	315°	+10°	135°	−10°	—	—	-----	2.02	1.0 ¹	—	Pou81	
EA	144°	+10°	—	—	322°	−4°	—	—	0.2884382	—	—	—	Mag83	
AM	152°	+29°	314°	+15°	134°	−15°	332°	−29°	-----	2.66	1.13	—	Zap+84	
A D	152°	+27°	315°	+16°	135°	−16°	332°	−27°	-----	2.26	1.35 ²	—	Pos+85	
EA	—E—	—E—	134°	−15°	330°	−30°	—	—	0.2883544	2.70	1.43	—	Mag86	
EAMD	—	—	314°	+17°	—E—	—E—	—	—	0.288335	2.22	1.19	—	Uch+87	
E	—E—	—E—	134°	−17°	336°	−32°	—	—	0.2883546	—	—	—	Mic88	
EA	—E—	—E—	—	—	328°	−26°	—	—	0.2883541	2.57	1.30	—	DeA92	
AMD	152°	+27°	315°	+16°	135°	−16°	332°	−27°	-----	2.26	1.36 ²	—	Det+92 ²⁵	
EAMD	145°	+3°	—	—	325°	−3°	—	—	-----	1.0 ¹	1.0 ¹	X ¹⁵	Det+92 ²⁵	
EAMD	149°	+22°	—	—	329°	−22°	—	—	-----	shape ¹⁴		—	Det+92 ²⁵	
EAMD	144°	+11°	—	—	324°	−11°	—	—	-----	shape ¹⁴		—	Det+92 ²⁵	
E	—E—	—E—	133°	−17°	336°	−33°	—	—	0.28835459	—	—	—	Det+92 ²⁵	
EA	—E—	—E—	—	—	328°	−26°	—	—	0.2883541	2.57	1.30	—	DeA95	
AM	147°	+20°	316°	+3°	136°	−3°	327°	−20°	-----	2.779	1.000	—	Bla+98	
E	—E—	—E—	128°	−14°	308°	−14°	—	—	0.28835474	—	—	—	Sza+99	
Synthesis	—E—	—E—	133°	−16°	329°	−25°	—	—	0.2883544	2.4	1.3	—	Synthesis	
675 Ludmilla														
EAM	12°	−45°	—	—	—E—	—E—	—	—	0.3215510	1.44	1.89	—	Vel+95	
EAM	15°	−35°	205°	−50°	—E—	—E—	—	—	0.321551	1.37	1.3	—	Vel+95	
Synthesis	15°	−40°	205°	−50°	—E—	—E—	—	—	0.321551	1.37	1.3	—	Synthesis	
683 Lanzia														
EA	198°	+55°	342°	+55°	162°	−55°	378°	−55°	-----	1.85	1.00	—	DeA95	
EA	—E—	—E—	15°	−52°	195°	−52°	—	—	0.1964156	1.15	1.05	—	Kis+99	
Synthesis	—E—	—E—	16°	−53°	196°	−53°	—	—	0.1964156	—	—	—	Synthesis	
694 Ekard														
R	—	—	Concentric ring region ⁶					—	—	-----	—	—	—	Ost87
EAM	96°	+32°	—	—	—E—	—E—	—	—	0.246744	1.42	1.38	—	Dr+88b	
EAM	105°	+29°	267°	+56°	—E—	—E—	—	—	0.2467465 ²	1.45	1.32 ²	—	Dru+91	
EAM	98°	+40°	—	—	—E—	—E—	—	—	0.2467460	1.46	1.73	—	Mic93	
EA	86°	+25°	242°	+25°	—E—	—E—	—	—	0.2467459	1.34	1.22 ²	—	DeA95	
Synthesis	96°	+31°	254°	+40°	—E—	—E—	—	—	0.2467460	1.4	—	—	Synthesis	

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
704 Interamnia													
Z	70° +10°							250° -10°	-----				Har+79
EAM	—E—	—E—		43° -21°				224° -22°	-----	1.19 ²	1.07		Mic93
EA				47° -3°				227° +1°	-----	1.11	1.06		DeA95
EAM	51° +22°	————		—E—				—E—	0.3636372	1.11	1.13		Mic+95
Synthesis	51° +22°	————		—E—				—E—	0.3636372	1.1	1.1		Synthesis
720 Bohlinia													
EAM ³²	65° +40°	249° +37°	————						0.3716084	1.4	1.2		Sli+03
L ³²	40° +43°	230° +41°	————						0.3716090	1.4	1.3		Sli+03
Synthesis	48° +41°	236° +38°	————						0.3716088				Synthesis
747 Winchester													
EAM	27° +50°	————		—E—				—E—	-----	1.16	2.60		Mic93
EA		353° +39°		173° -39°					-----	1.18	1.00		DeA95
804 Hispania													
EAM	90° +28°							270° -28°	-----	1.17	1.92		Mic92
EA	107° +49°	227° +50°		47° -50°				287° -49°	-----	1.20	2.00		DeA95
852 Wladilena													
A	53° +24°	235° +21°		55° -21°				233° -24°	-----	1.23	1.15		DeA+95
A	30° +30°	210° +30°		30° -30°				210° -30°	-----	2.3	1.2		Kis+99
951 Gaspra													
EAM	20° +22°	198° +13°		—E—				—E—	0.2934197	1.6	1.1		Mag+92
C	15° +16°	—C—		—C—				—C—	-----				Dav+92
EA	19° +20°	————		—E—				—E—	0.2934194	1.59	1.10		DeA92
AMF	15° +24°								-----	shape ^{13,12,17}			Bar+92
C	19° +21°	—C—		—C—				—C—	-----				Da+94a
C	19° +21°	—C—		—C—				—C—	-----	shape ²⁶			Tho+94
E C									0.2934177				Sim+95
EA	19° +20°	————		—E—				—E—	0.2934194	1.75	1.00		DeA95
L ³²	20° +19°	————		————				————	0.2934191	shape ³¹			Ka+01
Synthesis	19° +21°	—C—		—C—				—C—	0.293419				Synthesis
984 Gretia													
AM	46° +47°	48° +12°		228° -12°				226° -47°	-----				Bla+00
1036 Ganymed													
E	Prograde rotation								0.42951				Lu+87b
E	Retrograde rotation												Hah+89
L	————	————		————				208° -76°	0.42967	1.0	1.5 ³¹		Ka+02a
Synthesis	————	————		————				208° -76°	0.42967	1.0	1.5		Synthesis

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
1219 Britta													
E	Retrograde rotation								0.232290				Bin+87
1223 Neckar													
EAM ³²	70° +45°	225° +42°	—E—		—E—				0.3232105	1.47	1.28		Mic+00
EAM	73° +45°	258° +42°	————		————				0.3258850	1.6	1.3		Sli+03
L	73° +44°	259° +41°	————		————				0.3258850	1.5	1.4		Sli+03
Synthesis	72° +45°	247° +42°	————		————					1.5	1.3		Synthesis
1566 Icarus													
E	49°	0°	229°	0°					0.09471				Geh+70
EA			214°	+5°					0.094735	1.23	1.40		DeA95
Synthesis			214°	+5°					0.094735	1.23	1.40		Synthesis
1572 Posnania													
EAM ³²	—E—		—E—		46°	-65°	————		0.3353931	1.35	1.04		Mic+01
1580 Betulia													
A			140°	+20°			320°	-20°	-----	1.21 ¹⁰			Ted+78
EAM	80°	+12°			212°	-5°			0.2565	1.7	1.4		Dru+90
1620 Geographos													
E			—E—		20°	-60°			0.2176378	shape ⁸			Dun74
A			check ⁵						-----				Mi+90b
EAM			—E—		15°	-77°			0.2176342	2.7	1.05		Kwi94
EAM			—E—		15°	-77°			0.2176390	2.7	1.05		Kwi94
EAM			—E—		54°	-52°			0.21763867	2.6	1.1		Mic+94
EAM			—E—		54°	-52°			0.21763866	2.5	1.1		Kwi95
EAM			—E—		54°	-52°			0.21764381	2.5	1.1		Kwi95
EAM	—E—		—E—		56°	-47°	————		0.21763860	2.58	1.00		Mag+96
R	————		————		55°	-46°	————		0.21763863	2.5	1.0 ²⁹		H+O99
L	————		————		55°	-45°	————		0.21763858	shape ³¹			Ka+01
Synthesis					55°	-46°			0.21764	2.6	1.1		Synthesis
1627 Ivar													
E	Prograde rotation								0.19991				Lup+86
E	147°	+13°	333°	+18°					0.199953				Ve+89a ²³
EA	110°	+20°	320°	+40°					0.19995				Hah+89
E	—E—		—E—		143°	-37°			0.1999154				Kis+99
A	145°	+34°	325°	+34°	145°	-34°	325°	-34°	-----	2.0	1.09		Kis+99
1685 Toro													
EA			200°	+55°	—E—				0.42481	3.2			Dun+73
EA			220°	+30°	—E—				0.424808	2.08	1.80		DeA95
Synthesis			210°	+43°	—E—				0.424808	2.1	1.8		Synthesis

Basic data	Spin vector solutions (ecliptic coordinates of equinox 1950)								Sidereal period (days)	Ellipsoidal model		Albedo varieg.	Reference code
	λ_0	β_0	λ_0	β_0	λ_0	β_0	λ_0	β_0		a/b	b/c		
1862 Apollo													
EA		—E—		56°	−26°				0.1277265				Har+87
EA		—E—		38°	−36°				0.127754	2.08	1.80		DeA95
Synthesis		—E—		47°	−31°				0.127754	2.08	1.80		Synthesis
2063 Bacchus													
R				24°	−26°				0.652		shape ³⁰		Ben+99
3103 Eger													
E		Prograde rotation							0.2377819				Vel+92
L	————	————		10°	−50°		————		0.23778217	1.5	1 ³¹		Ka+02a
Synthesis	————	————		10°	−50°		————		0.23778217	1.5	1		Synthesis
3200 Phaeton													
EAM	—E—	—E—		97°	−11°	276°	−15°		0.5906				Kru+02
Synthesis	—E—	—E—		97°	−11°	276°	−15°		0.5906				Synthesis
3908 1980 PA													
EAM	177° +23°	312° +61°	—E—			—E—			0.18441	1.3	1.2 ²		Dru+90
4179 Toutatis													
R			Precessing						-----	2.10	1.35 ²⁹		H+O95
4769 Castalia													
R						253°	−56°		0.17038				Hud+97
R				62°	−7°				0.17058				Hud+97
EAM						253°	−56°		0.17038				Eri+00
EAM		242° +7°							0.17058				Eri+00
Synthesis						235°	−56°		0.17058				Synthesis
5145 Pholus													
EAM	149° +26°					337°	−5°		0.4159256	1.8	1.0		Far+01
6053 1993 BW3													
E	—E—	—E—		175°	−9°	359°	−26°		0.107238 ²	1.08	1.5		Pra+97
L	178° +10°	————	————			358°	−8°		0.107246	1.1	1.6 ³¹		Ka+02a
6489 Golevka													
EA ³²	————	347° +35°	—R—			—R—			0.25110	1.4	1.0		Mot+97
R	————	————	————			202°	−45°		0.251204	1.01	1.0 ^{29,30}		Hud+00
L	————	————	————			208°	−47°		0.251238		shape ³¹		Ka+01
Synthesis	————	————	————			205°	−46°		0.25122				Synthesis

Footnotes:

¹ Assumed value.

² Mean value of two significantly different solutions.

³ Different spin axis solutions for different apparitions was interpreted as indicating a precessing motion.

- 4 Symmetric solution obtained, but quantitative specification is missing.
- 5 Consistency check of previous spin vector determinations.
- 6 Based on a radar experiment giving constraints on the aspect angle at the time of observation.
- 7 Based on two radar experiments giving an aspect circle at the time of observation.
- 8 Modelled as a cylinder with hemispherical ends.
- 9 Modelled as a cylinder cut out of a sphere.
- 10 Complex shape.
- 11 Modelled as a Jacobi ellipsoid.
- 12 Modelled as 8 octants of ellipsoids put together to form a continuous surface.
- 13 Modelled as an ellipsoid with a piece removed by a plane cut.
- 14 Modelled as an irregular polyhedron.
- 15 Modelled as a sphere with free albedo facets.
- 16 Results show that there is no significant albedo variegation.
- 17 Modelled using a spherical harmonics expansion of the shape.
- 18 Albedo model with a single big spot.
- 19 Modelled as a sphere with 2 dark regions.
- 20 Speckle images showing albedo variegation.
- 21 Bi-axial ellipsoid ($a/b=1.15$) with a flat region just off the South Pole.
- 22 Also presented in Ful+91.
- 23 Also presented in English in Lup+90.
- 24 Also presented in Mi+90c.
- 25 Also presented in Det+94.
- 26 Detailed model from space images.
- 27 Also presented in Mic94.
- 28 The spin axis is not aligned with the c-axis of the ellipsoid model.
- 29 DEEVE - dynamically equivalent equal volume ellipsoid adopted for the complex shape.
- 30 Complex radar model.
- 31 Convex shape obtained with lightcurve inversion.
- 32 Pole coordinates calculated for J2000.
- 33 Values for pole coordinates are 17.238, 11.351
- 34 Also presented in Bla+98.