

Ancillary Data

This data set contains the Peter Thomas shape model for Saturn's satellite Pandora (Saturn XVII,) based on optical data from the Cassini Imaging Science Subsystem (ISS) Narrow-Angle Camera (NAC) instrument. The current version of this data set contains the following shape model file:

Pandora_30k_plt.tab

This shape model file also has a detached label file, with a suffix of .xml, which describes the format and content. The shape model is in a plate model format and only represents the model shape, with no gravity or slope information.

Coordinate System

+X is Saturn-facing; + Y is opposite the direction of orbital motion; +Z is along the positive rotation axis. Because of orbital eccentricity, the x-axis deviates slightly from perfect Saturn alignment around the orbit. However, this deviation (optical libration) is too small to be detected in the data used.

Rotational elements applicable to this model: PANDORA

BODY617_POLE_RA = (40.58 -0.036 0.)

BODY617_POLE_DEC = (83.53 -0.004 0.)

BODY617_PM = (154.20 +572.789100 0.)

Rotational elements from Archinal et al. 2011.

For information on using SPICE kernels, please see pck_req.asc - "PCK Required Reading", PCK required reading document, last revised on 2009 Apr 15 by B.V. Semenov.

Confidence Level Notes

Images used and their associated viewing geometries are listed in Table 1 below. Uncertainties in the shape model have been based on pixel scale and spatial density and solution residuals of control points.

Likely uncertainty of model radii for Pandora range from 0.2 to 0.3 km, portions of the trailing side and south polar region are the most uncertain.

Limitations

The shape model is intended for global geometric, geologic, and geophysical studies. The morphology of small craters is not reliably included; some relatively large craters can show approximate measures such as depth/diameter. Regional slopes can be calculated to accuracies estimated by the listed uncertainties.

Acknowledgements

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Table 1. Cassini ISS Images used for Pandora shape model

Filter: filters used in each filter wheel. CL: clear; UV: ultraviolet; VIO: violet; BL: blue; GRN: green; MT: methane; RED: red; CB: methane continuum; IR: infrared; P: polarization. Details of filter bandpasses and use in Porco et al. (2004).

SC lat lon: Sub spacecraft position in degrees. Lon is West longitude where 90°W is the leading point.

Solar lat lon: sub solar position in degrees

Range: distance to object center from spacecraft, km

Noraz: image orientation of the projected object spin axis, degrees clockwise from up.

Samp: object center x-coordinate in image 0 is at left of image in pixels

Line: object center y-coordinate in image; 0 is at top of image in pixels

Phase: solar phase angle at center of image in degrees.

Images used in construction of model of PANDORA:

Image	filt	filt	S/C		Solar		range	noraz	samp	line	phase
			lat	lon	lat	lon					
N1504611846_1	CL1	CL2	12.95	247.27	-20.49	285.02	52312.7	333.06	561.90	430.60	49.96
N1504612286_1	CL1	CL2	15.61	248.26	-20.49	287.94	52075.7	333.18	416.00	607.60	53.12
N1504612319_1	CL1	CL2	15.81	248.32	-20.49	288.15	52063.7	333.17	415.60	604.70	53.36
N1504612352_1	CL1	CL2	16.01	248.38	-20.49	288.37	52052.5	333.16	414.90	604.50	53.61
N1504612385_1	CL1	UV3	16.20	248.44	-20.49	288.59	52043.6	333.16	414.80	604.70	53.85
N1504612418_1	CL1	IR3	16.40	248.51	-20.49	288.81	52033.8	333.15	414.30	605.60	54.09
N1504612452_1	P0	GRN	16.61	248.57	-20.49	289.03	52024.8	333.13	415.90	600.30	54.34
N1504612485_1	P60	GRN	16.81	248.63	-20.49	289.25	52015.7	333.12	413.00	600.50	54.59
N1504613484_1	CL1	CL2	22.70	249.80	-20.49	295.88	52175.8	331.88	419.70	608.70	62.33
N1504613550_1	CL1	UV3	23.07	249.83	-20.49	296.31	52214.9	331.74	417.80	604.20	62.85
N1504613583_1	CL1	IR3	23.26	249.85	-20.49	296.53	52234.7	331.67	416.90	606.00	63.12
N1504613650_1	P60	GRN	23.64	249.88	-20.49	296.98	52279.2	331.53	413.90	598.30	63.65
N1504613683_1	P12	GRN	23.83	249.89	-20.49	297.19	52302.4	331.45	415.20	599.90	63.92
N1654245770_1	CL1	CL2	-12.21	83.62	4.49	60.02	100310.2	159.02	562.10	577.40	28.80
N1654245803_1	RED	CL2	-12.26	83.61	4.50	60.24	100381.8	159.14	567.60	578.10	28.65
N1654245836_1	CL1	GRN	-12.32	83.61	4.49	60.46	100454.1	159.26	564.40	579.50	28.50
N1654245869_1	BL1	CL2	-12.38	83.61	4.49	60.68	100526.1	159.38	564.40	578.90	28.36
N1654246332_1	CL1	CL2	-13.14	83.64	4.50	63.76	101603.6	161.03	561.90	578.10	26.48
N1654246465_1	CL1	IR3	-13.35	83.67	4.50	64.63	101927.0	161.48	562.70	578.00	26.00
N1654246514_1	CL1	UV3	-13.43	83.68	4.49	64.93	102040.5	161.64	559.10	577.80	25.84
N1860787466_1	CL1	CL2	55.26	84.06	26.64	164.41	97538.6	335.97	434.20	446.30	63.01
N1860787554_1	CL1	GRN	55.02	84.45	26.64	164.99	95953.2	335.85	440.00	443.40	63.15
N1860787587_1	CL1	IR1	54.92	84.60	26.64	165.21	95356.7	335.80	444.30	442.50	63.21
N1860787863_1	P0	GRN	54.11	85.84	26.64	167.04	90354.4	335.45	486.30	433.00	63.68
N1860788161_1	CL1	CL2	53.12	87.20	26.64	169.01	84902.0	335.07	486.60	428.60	64.21
N1860788277_1	CL1	GRN	52.69	87.74	26.64	169.79	82773.9	334.92	480.50	423.70	64.43
N1860788442_1	IR2	CL2	52.06	88.50	26.64	170.88	79740.8	334.72	470.50	418.30	64.75
N1860788884_1	CL1	IR3	50.07	90.57	26.64	173.80	71576.6	334.20	454.80	405.00	65.70
N1860788917_1	CL1	CL2	49.90	90.73	26.64	174.03	70955.3	334.16	452.30	402.70	65.79
N1860790346_1	CL1	UV3	38.26	97.51	26.64	183.49	44887.8	332.36	288.70	224.10	70.92
N1860790401_1	CL1	GRN	37.52	97.77	26.64	183.86	43904.0	332.26	280.20	236.00	71.25
N1860790502_1	CL1	CL2	36.10	98.25	26.64	184.53	42150.3	332.07	271.70	225.10	71.88
N1860790629_1	P12	GRN	34.15	98.84	26.65	185.38	39988.1	331.79	263.90	208.90	72.76
N1860790909_1	CL1	UV3	29.00	100.12	26.64	187.22	35400.2	337.00	263.10	153.80	75.11
N1860790942_1	CL1	IR3	28.29	100.27	26.64	187.44	34866.7	336.99	256.10	147.60	75.44
N1860790985_1	CL1	GRN	27.34	100.47	26.64	187.74	34187.2	336.96	250.50	137.80	75.89
N1860792100_1	CL1	CL2	-14.24	105.06	26.64	195.13	22355.0	330.33	120.00	132.90	96.39
N1860792195_1	CL1	GRN	-19.25	105.38	26.65	195.75	22157.4	328.35	125.00	214.60	98.82
N1860792229_1	CL1	IR3	-21.03	105.49	26.64	195.98	22128.4	327.56	128.00	235.70	99.67
N1860792484_1	P0	GRN	-34.48	106.27	26.64	197.68	22604.3	319.25	188.40	399.90	105.78
N1860792501_1	P60	GRN	-35.35	106.31	26.64	197.78	22678.7	318.54	189.60	412.80	106.15
N1860792518_1	P12	GRN	-36.20	106.36	26.64	197.91	22758.1	317.82	198.00	426.40	106.52
N1860792597_1	CL1	GRN	-40.11	106.56	26.64	198.42	23192.1	314.20	225.90	477.00	108.12
N1860792631_1	CL1	IR3	-41.71	106.64	26.64	198.65	23407.0	312.55	240.60	500.70	108.77
N1860792666_1	CL1	CL2	-43.39	106.72	26.64	198.89	23655.9	310.71	256.30	519.50	109.43
N1860792727_1	CL1	CL2	-46.17	106.85	26.64	199.29	24126.2	307.39	283.00	555.20	110.48