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Corona structures driven by plume–lithosphere interactions and evidence for ongoing plume activity on Venus

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Supplementary Table 1 – Summary of the coronae classification in this study. The 125 largest coronae (those with a diameter equal to or greater than 300 km) from the Venusian coronae nomenclature database⁴⁵ were analysed. In addition, coronae with located in identified (corona-dominated) hotspots⁴⁶ were also considered, noted with an asterisk *. Each corona is labeled as currently “active” if it features a clear outer rise and trench, “inactive” if no outer rise but a rim and inner depression is evident, or “unclassified” if the presence of these features is ambiguous (for more details regarding this global analysis, see the main text and Methods section in the manuscript). The active and inactive coronae are plotted in Figure 2 in the main text, whereas the all analysed coronae are plotted in Extended Data Figure 1. ^a Coronae were used for comparison in Figure 5 in the main text of this manuscript due to the availability of high-resolution radar images. ^b Coronae come from Lang and López²⁷. A KML file based on this table is freely available at <https://doi.org/10.5281/zenodo.3608692> and can be used in Google Earth or Google Venus.

[27] Lang, N.P. and López, I. (2015). The magmatic evolution of three Venusian coronae. From: Platz, T., Massironi, M., Byrne, P. K. & Hiesinger, H. (eds) 2015. *Volcanism and Tectonism across the Inner Solar System*. Geological Society London, Special Publications, 401, 77-95.

[45] USGS Astrogeology Science Centre, Gazetteer for Planetary Nomenclature
<https://planetarynames.wr.usgs.gov/SearchResults?target=VENUS&featureType=Corona.%20coronae>

[46] Smrekar, S. E., & Stofan, E. R. (1999). Origin of Corona-Dominated Topographic Rises on Venus. *Icarus*, 139(1), 100–115. <https://doi.org/10.1006/icar.1999.6090>

Corona name	Longitude [0°, 360°E]	Latitude [-90°, 90°]	Corona diameter [km]	Classification	Morphology	Comments
Annapurna	152	-35.5	300	Active	Partial outer rise, trench, rim, inner low	
Aramaiti ^a	82	-26.3	350	Active	Outer rise, trench, rim, inner dome	
Artemis	135	-35	2600	Active	Partial outer rise, (double) trench, rim, irregular plateau	Double SE trench
Atahensik	170	-19	700	Active	Partial outer rise, (double) trench, rim, irregular plateau	Double SE trench, near chasmata
Atete	243.5	-16	600	Active	Partial trench, rim, inclined interior	
Bau	259.3	52.8	355	Active	Partial outer rise, trench, rim, inner dome	
Bele-Ili Corona	20	6	300	Active	Outer rise, trench, inner dome	
Beyla	15.5	26.5	400	Active	Partial outer rise, partial trench, rim, inner plateau	
Boann	136.5	27	300	Active	Partial trench, rim, inner dome	
Colijnsplaat	151	-32	350	Active	Deep trench, partial rim, inner dome	
Copia	75.5	-42.5	500	Active	Outer rise, trench, rim, irregular plateau	
Dunne-Musun	85	-60	630	Active	Partial trench, partial rim	
Eithinoha	7.5	-57	500	Active	Trench, rim, inner plateau	
Eve	359.8	-32	330	Active	Outer rise, trench, rim, inner dome	
Fatua	17.7	-16.3	400	Active	Partial outer rise, (double) trench, rim, inner low	
Inanna	35.9	-37	350	Active	Outer rise, trench, rim, irregular plateau	
Isong	49.2	12	540	Active	Partial trough, rim, inner dome	Eastern Eistla Regio
Lengdin	223	2.5	525	Active	Partial trench, rim, inner plateau	
Lilwani	271.5	-29.5	500	Active	Partial outer rise, partial trench, partial rim, inner low	
Ma	57	-22.5	420	Active	Outer rise, trench, partial rim	
Marzyana	67.5	-53	350	Active	Outer rise, trench, inner high	
Miralaidji	163.8	-14	300	Active	Outer rise, trench, rim, inner high	Near chasmata, deep N trench
Nefertiti	48.2	35.9	371	Active	Partial outer rise, partial trench, rim, inner plateau	
Nightingale	129.5	63.6	470	Active	Partial outer rise, trench, rim, inner low	Deep S trench
Ninmah	49	16.5	700	Active	Partial trough, rim, interior high	Eastern Eistla Regio
Otygen	30.5	-57	400	Active	Partial outer rise, trench, rim, inner plateau	
Perchta	231.5	19.9	320	Active	Partial trench, partial plateau	
Quetzalpetlatl	357	-68	780	Active	Partial trench, rim and partial plateau	Deep trench NW arc, recent lava flows ⁴⁶
Rigatona*	279	-33.5	300	Active	Partial outer rise, trough, rim, inner low	Themis Regio
Semiramus	293	-37	375	Active	Partial outer rise, trough, irregular plateau	Themis Regio
Shulhamite*	284.0	-38.5	275	Active	Partial outer rise, trench rim, raised interior	Themis Regio
Shyv-Amashe	63	-57	410	Active	Partial trench, partial rim	
Tamfana	6	-36.3	400	Active	Partial outer rise, trench, rim, irregular interior	
Triglava	95	-53.5	400	Active	Partial trench, rim, inner dome	
Ukemochi	296.1	-39	300	Active	Partial outer rise, rough, plateau	Themis Regio
Uma-y-Ene	50.5	-27.5	370	Active	Outer rise, trench, inner dome	
Zywie*	291.2	-38.6	200	Active	Outer rise, trench, rim, inner low	Themis Regio
Aruru	262	9	450	Inactive	Rim, inner (lower) plateau	
Atargatis	8.6	-8	360	Inactive	Rim, inner low, small dome	
Benten	340	16	310	Inactive	Rim, inner depression	
Beruth	233.5	-19	350	Inactive	Rim, inner depression	
Bhumidevi ^a	343.4	-17.2	150	Inactive	Rim, inner depression	
Calakomana	43.5	6.5	575	Inactive	Rim, inner depression	Eastern Eistla Regio

Cauteovan	142.9	31.5	553	Inactive	Rim, inner depression	Correlation with several smaller coronae
Cybele	20.7	-7.5	500	Inactive	Rim, inner depression, small dome	
Deohako	118	-67.5	300	Inactive	Rim, inner depression	
Ereshkigal	84.5	21	320	Inactive	Rim, inner depression	
Furachoga	258	-38	550	Inactive	Partial rim, inner depression	
Heng-O	355	2	1060	Inactive	Rim, irregular inner low	
Ilyana Corona	65	-69.5	300	Inactive	Partial rim, inner depression	
Juksakka	44.5	-19.5	320	Inactive	Rim, inner depression	
Kaltash	75	0.5	450	Inactive	Rim, irregular inner depression	
Kamadhenu	136.5	21	400	Inactive	Partial rim, inner depression	
Krumine	261.5	-5	300	Inactive	Partial rim, inner depression	
Lalohonua	250.5	-24	460	Inactive	Rim, inner (lower) plateau	
Mukylchin	46	-12.5	525	Inactive	Partial rim, inner low, inner dome	
Nabuzana	47	-8.5	525	Inactive	Partial rim, interior low	
Latmikaik	123	-64	500	Inactive	Rim, inner depression	
Nalwanga	247	48.7	380	Inactive	Partial rim, inner depression	
Nepret	6.8	52.7	323	Inactive	Rim, inner depression	
Omosi-Mama	306	64.5	306	Inactive	Partial rim, inner depression	
Poloznitsa	302	0.5	675	Inactive	Rim, inner depression, small dome	
Sinlaku	260.3	17.3	300	Inactive	Rim, inner depression, dome	
Thermuthis	33	-8	330	Inactive	Rim, inner depression	
Thouris ^a	12.9	-6.5	190	Inactive	Rim, inner depression	
Tonatzin	164	-53	400	Inactive	Rim, partial (lower) plateau	
Tusholi	101.2	69.5	350	Inactive	Rim, inner depression	
Urash	282	43.2	360	Inactive	Rim, inner depression	
Xilonen	321	51	300	Inactive	Rim, inner depression	
Zamin	258.3	31.5	315	Inactive	Partial rim, inner depression	
Zemire ^b	312.5	31.5	200	Inactive	Rim, inner depression	
Zisa	221	12	850	Inactive	Rim, partial inner depression	
Ama	278.2	-45.7	550	Unclassified	Ambiguous trench, dome	Poorly resolved
Ambar-ona	82.5	-70	550	Unclassified	Ambiguous trench, ambiguous dome	Poorly resolved
Anahit	277.3	77.1	324	Unclassified	Ambiguous rim	Poorly resolved
Ashnan	357	50.2	300	Unclassified	Unresolved	Poorly resolved
Azham	252.7	66.4	380	Unclassified	Partial trench, rim, inner depression	Poorly resolved
Bachue	261.4	73.3	460	Unclassified	Ambiguous trench, rim, inner low	Poorly resolved
Beiwe	306.5	52.6	600	Unclassified	Ambiguous rim, irregular interior	
Bibi-Patma	302	-47	450	Unclassified	Irregular plateau	Poorly resolved
Blathnat	293.8	35	300	Unclassified	Irregular plateau	
Boala*	0	-70	120	Unclassified	Depression	Poorly resolved; volcanic activity ⁴⁶
Ceres	151.5	-16	675	Unclassified	Trench/Chasmata, rim, irregular interior	Near chasmata
Chanume	245.5	-29.5	330	Unclassified	Irregular profile	Poorly resolved
Chuku	265.5	-23.5	380	Unclassified	Irregular plateau	
Demvamvit	38	-65.5	370	Unclassified	Ambiguous trench, partial rim, irregular interior	Poorly resolved
Didilia*	37.5	18.5	320	Unclassified	Rim, inner plateau, dome	Eastern Eistla Regio; recent volcanic flows ^{19,68}

Disani	57.5	2.7	300	Unclassified	Ambiguous trench, irregular interior	Poorly resolved
Earhart	136.2	70.1	414	Unclassified	Ambiguous partial trench, rim	
Ekhe-Burkhan	40	-50	600	Unclassified	Unresolved	Poorly resolved
Enekeler	264	-46	250	Unclassified	Partial rim, irregular interior	
Erigone	284	-34.5	325	Unclassified	Depression, ambiguous rim	
Feronia	281.7	68	360	Unclassified	Irregular profile	
Gefjun	98.5	-33.5	300	Unclassified	Ambiguous rim, dome	Poorly resolved
Haumea	21.8	54	375	Unclassified	Ambiguous rim, inner depression	Poorly resolved
Iang-Mdiye	86	-47	300	Unclassified	Partial rim, irregular interior	Poorly resolved
Inari	120.3	-18	300	Unclassified	Irregular plateau	Poorly resolved
Iweridd	310	-21	500	Unclassified	Irregular plateau	
Javine	251.5	-5.5	450	Unclassified	Partial trench, irregular plateau	Poorly resolved
Kamui-Huci	322.5	-63.5	300	Unclassified	Ambiguous trench, ambiguous dome	Poorly resolved
Ki	227.8	43.2	300	Unclassified	Irregular features	Poorly resolved
Kuan-Yin	10	-4.3	310	Unclassified	Ambiguous trench, rim, irregular plateau	
Latta*	287	-38.6	225	Unclassified	Irregular plateau	Themis Regio; poorly resolved
Libera	24	12.5	350	Unclassified	Rim, irregular interior	
Ludjatako	250.5	-12.5	300	Unclassified	Irregular plateau	
Maram	221.5	-7.5	600	Unclassified	Ambiguous partial trench, partial rim, irregular plateau	
Maa-Ema	102.5	40.8	300	Unclassified	Partial rim, inner dome	Poorly resolved
Mama-Allpa	31	-27	300	Unclassified	Ambiguous partial trench, rim, inner plateau	
May-enensi	68	-42.5	330	Unclassified	Partial rim, irregular interior	
Nehalennia	10	14	345	Unclassified	Rim, irregular interior	Central Eistla Regio
Nissaba	355.5	25.5	300	Unclassified	Ambiguous rim, dome	
Oanuavae	255.5	-32.5	375	Unclassified	Irregular plateau	Poorly resolved
Obiemi	276.6	-31.9	300	Unclassified	Ambiguous partial trench, irregular plateau	
Pani	234.5	17	500	Unclassified	Partial trench/chasmata, partial rim	Near chasmata
Pavlova	39.5	14.5	500	Unclassified	Rim, inner dome	Eastern Eistla Regio; recent volcanic flows ^{19,68}
Pazar-ana	214.8	-3.2	300	Unclassified	Irregular features	Poorly resolved, near chasmata
Pomona	299.4	79.3	315	Unclassified	Partial rim, partial trench	Poorly resolved
Prthivi	248.5	10.8	375	Unclassified	Irregular profile	
Rananeida	263.4	62.6	448	Unclassified	Rim, partial trench, irregular interior	
Rzhanitsa	214.6	-17.6	450	Unclassified	Irregular plateau	Poorly resolved
Rosmerta	124.5	0	300	Unclassified	Partial depression, ambiguous rim	
Sappho*	15.4	14.2	300	Unclassified	Rim, raised interior	Central Eistla Regio; recent volcanic flows ^{19,68}
Selu	6	-42.5	300	Unclassified	Unresolved	Poorly resolved
Shiwanokia	279.8	-42	500	Unclassified	Partial rim, irregular plateau	Themis Regio
Sith	176.5	-10.2	350	Unclassified	Irregular topography	Poorly resolved, near chasmata
Su-Anasy	39	-78	300	Unclassified	Unresolved	Poorly resolved
Tamiyo	298.5	-36	400	Unclassified	Partial rim, inner (lower) plateau	Themis Regio
Toyo-Uke	41.5	-62.5	300	Unclassified	Unresolved	Poorly resolved
Ugatame	255	-76.5	370	Unclassified	Irregular profile	Poorly resolved
Ulgen-Ekhe	224	-14.2	300	Unclassified	Ambiguous trench, partial rim	Poorly resolved
Vacuna	96	60.4	448	Unclassified	Partial rim, ambiguous inner depression	Poorly resolved
Whatitiri	140	-83	300	Unclassified	Unresolved	Poorly resolved

Gülcher et al., (2020), Nature Geosciences

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Zemina	186	-11.7	530	Unclassified	Partial trench/chasmata, partial rim	Near chasmata
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