



Supplement of

Geometric estimation of volcanic eruption column height from GOES-R near-limb imagery – Part 1: Methodology

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Table S1. Name, geodetic latitude/longitude, true height, side-view estimated height, and date/time of the GOES-17 image for the 50 volcanic peaks plotted in Fig. 8, in order of increasing latitude. Volcano data are from PeakVisor, but for the name we also list the more accurate KVERT nomenclature. The KVERT geodetic coordinates and elevation are available from the Geoportal of the Institute of Volcanology and Seismology, FEB RAS (<http://www.kscnet.ru/ivs/kvert/volcano.php?lang=en>).

Name in PeakVisor / KVERT	Geodetic latitude and longitude	True height (m)	Estimated height (m)	Date and time of GOES-17 image
01. Gora Brat Chirpoyev / Brat Chirpoev	46.4630°N, 150.7945°E	727	813	30 March 2020, 02:00 UTC
02. Vulkan Chernogo / Chernogo	46.5207°N, 150.8674°E	601	812	30 March 2020, 02:00 UTC
03. Gora Chirpoy / Chirpoy	46.5320°N, 150.8715°E	664	813	30 March 2020, 02:00 UTC
04. Gora Broutona / Broutona	46.7209°N, 150.7324°E	771	813	30 March 2020, 02:00 UTC
05. Gora Mil'na / Milna	46.8144°N, 151.7861°E	1514	1835	30 March 2020, 02:00 UTC
06. Vulkan Prevo / Prevo Peak	47.0138°N, 152.1166°E	1382	1215	30 March 2020, 02:00 UTC
07. Vulkan Pallasa / Pallas Peak	47.3413°N, 152.4775°E	983	997	30 March 2020, 02:00 UTC
08. Gora Rasshua / Rasshua	47.7554°N, 153.0207°E	956	962	30 March 2020, 02:00 UTC
09. Sarychev Peak / Sarychev Peak	48.0897°N, 153.2000°E	1454	1614	30 March 2020, 02:00 UTC
10. Vulkan Raykoke / Raikoke	48.2909°N, 153.2517°E	543	807	04 April 2020, 00:50 UTC
11. Ekarma / Ekarma	48.9477°N, 153.9412°E	1166	1388	30 March 2020, 00:00 UTC
12. Vulkan Chirinkotan / Chirinkotan	48.9799°N, 153.4794°E	713	847	30 March 2020, 00:00 UTC
13. Pik Severgin / Severgin	49.1148°N, 154.5118°E	1149	1205	30 March 2020, 00:00 UTC
14. Vulkan Krenitsyna / Krenitsyn Peak	49.3517°N, 154.7047°E	1251	1294	30 March 2020, 00:00 UTC
15. Vulkan Nemo / Nemo Peak	49.5642°N, 154.8122°E	1015	1026	30 March 2020, 02:00 UTC
16. Gora Makanrushi / Makanrushi	49.7831°N, 154.4355°E	1143	1157	30 March 2020, 02:00 UTC
17. Gora Shirinki / Antsiferova (Shirinki)	50.2004°N, 154.9750°E	709	976	30 March 2020, 00:00 UTC

Table S1. Continued.

Name in PeakVisor / KVERT	Geodetic latitude and longitude	True height (m)	Estimated height (m)	Date and time of GOES-17 image
18. Fuss Peak / Fuss Peak	50.2677°N, 155.2469°E	1773	1654	30 March 2020, 00:00 UTC
19. Čikurački / Chikurachki	50.3233°N, 155.4610°E	1793	1774	30 March 2020, 00:00 UTC
20. Alaid / Alaid	50.8608°N, 155.5647°E	2339	2399	30 March 2020, 00:00 UTC
21. Gora Moshkovskaya / Mashkovtsev	51.0995°N, 156.7200°E	502	507	02 March 2020, 23:10 UTC
22. Kambalny Volcano / Kambalny	51.3058°N, 156.8759°E	2151	2219	02 March 2020, 23:10 UTC
23. Khodutka / Khodutka	52.0624°N, 157.7091°E	2064	2147	02 March 2020, 23:10 UTC
24. Opala / Opala	52.5426°N, 157.3384°E	2456	2217	02 March 2020, 23:10 UTC
25. Vulkan Vilyuchinskaya Sopka / Vilyuchinsky	52.7047°N, 158.2811°E	2173	1977	02 March 2020, 23:10 UTC
26. Vulkan Avachinskaya Sopka / Avachinsky	53.2556°N, 158.8367°E	2741	2579	02 March 2020, 23:10 UTC
27. Koryaksky / Koryaksky	53.3207°N, 158.7117°E	3456	3153	02 March 2020, 23:10 UTC
28. Karymsky / Karymsky	54.0489°N, 159.4426°E	1534	1823	17 April 2020, 23:00 UTC
29. Sopka Taunshits / Taunshits	54.5309°N, 159.8059°E	2353	2201	02 March 2020, 23:10 UTC
30. Vulkan Krasheninnikova / Krasheninnikov	54.6003°N, 160.2732°E	1775	1806	02 March 2020, 23:10 UTC
31. Vulkan Unana / Unana	54.6432°N, 159.7184°E	2173	2353	02 March 2020, 23:10 UTC
32. Vulkan Kronotskaya Sopka / Kronotsky	54.7527°N, 160.5325°E	3528	3548	02 March 2020, 23:10 UTC
33. Gora Gamchen / Gamchen	54.9741°N, 160.7036°E	2584	2435	02 March 2020, 23:10 UTC
34. Vulkan Kizimen / Kizimen	55.1304°N, 160.3200°E	2485	2232	07 March 2020, 23:10 UTC

Table S1. Continued.

Name in PeakVisor / KVERT	Geodetic latitude and longitude	True height (m)	Estimated height (m)	Date and time of GOES-17 image
35. Vulkan Ichinskaya Sopka / Ichinsky	55.6789°N, 157.7227°E	3621	3788	07 March 2020, 23:10 UTC
36. Gora Shish / Gora Shish	55.7517°N, 161.1770°E	2491	2385	02 March 2020, 23:10 UTC
37. Gora Bolshaya Udina / Bolshaya Udina	55.7581°N, 160.5261°E	2923	2925	07 March 2020, 23:10 UTC
38. Gora Ostryy Tolbachik / Ostry Tolbachik	55.8344°N, 160.3364°E	3682	3611	07 March 2020, 23:10 UTC
39. Gora Oval'naya Zimina / Ovalnaya Zimina	55.8655°N, 160.6039°E	3081	3071	08 April 2020, 21:00 UTC
40. Bezymianny Volcano / Bezymianny	55.9729°N, 160.5959°E	2907	2780	02 March 2020, 23:10 UTC
41. Vulkan Kamen / Kamen	56.0177°N, 160.5965°E	4619	4486	08 April 2020, 19:00 UTC
42. Klyuchevskaya Sopka / Klyuchevskoy	56.0559°N, 160.6442°E	4835	4730	08 April 2020, 19:00 UTC
43. Krestovskii / Krestovsky	56.1134°N, 160.5083°E	4048	4243	08 April 2020, 19:00 UTC
44. Young Shiveluch / Young Sheveluch	56.6356°N, 161.3152°E	2589	2361	08 April 2020, 19:00 UTC
45. Old Shiveluch / Old Sheveluch	56.6572°N, 161.3534°E	3307	3172	08 April 2020, 19:00 UTC
46. Vulkan Gornogo Instituta / Gorny Institute	57.3293°N, 160.1954°E	2127	2053	08 April 2020, 19:00 UTC
47. Belii / Bely	57.8748°N, 160.5241°E	2170	2162	08 April 2020, 19:00 UTC
48. Khuvkhoitun / Khuvkhoitun	57.9213°N, 160.6765°E	2618	2662	08 April 2020, 19:00 UTC
49. Atlasova / Atlasov	57.9627°N, 160.6543°E	1765	1663	08 April 2020, 19:00 UTC
50. Slyunina / Slyunin	57.9775°N, 160.7495°E	1697	1525	08 April 2020, 19:00 UTC