



Supplement of

The CALIPSO version 4.5 stratospheric aerosol subtyping algorithm

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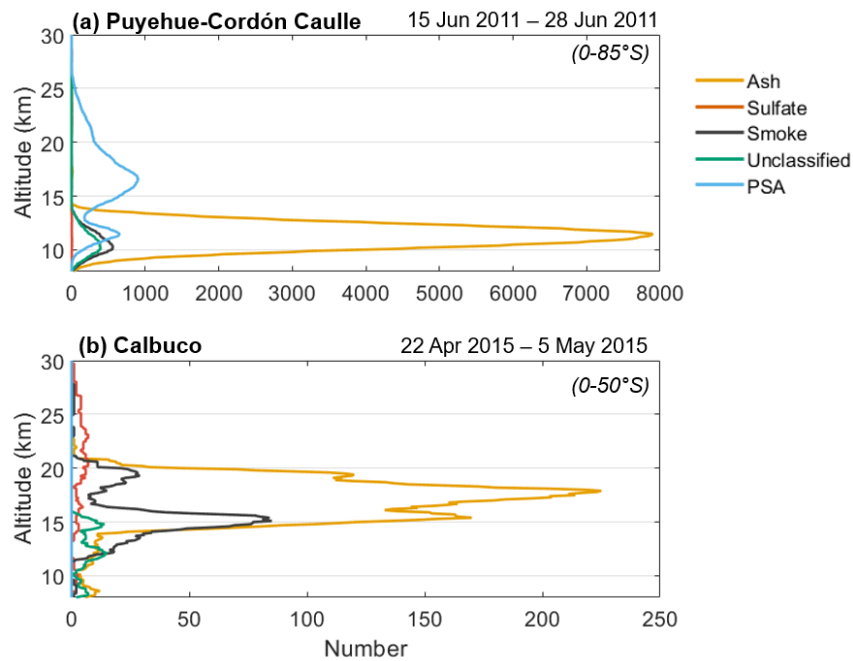
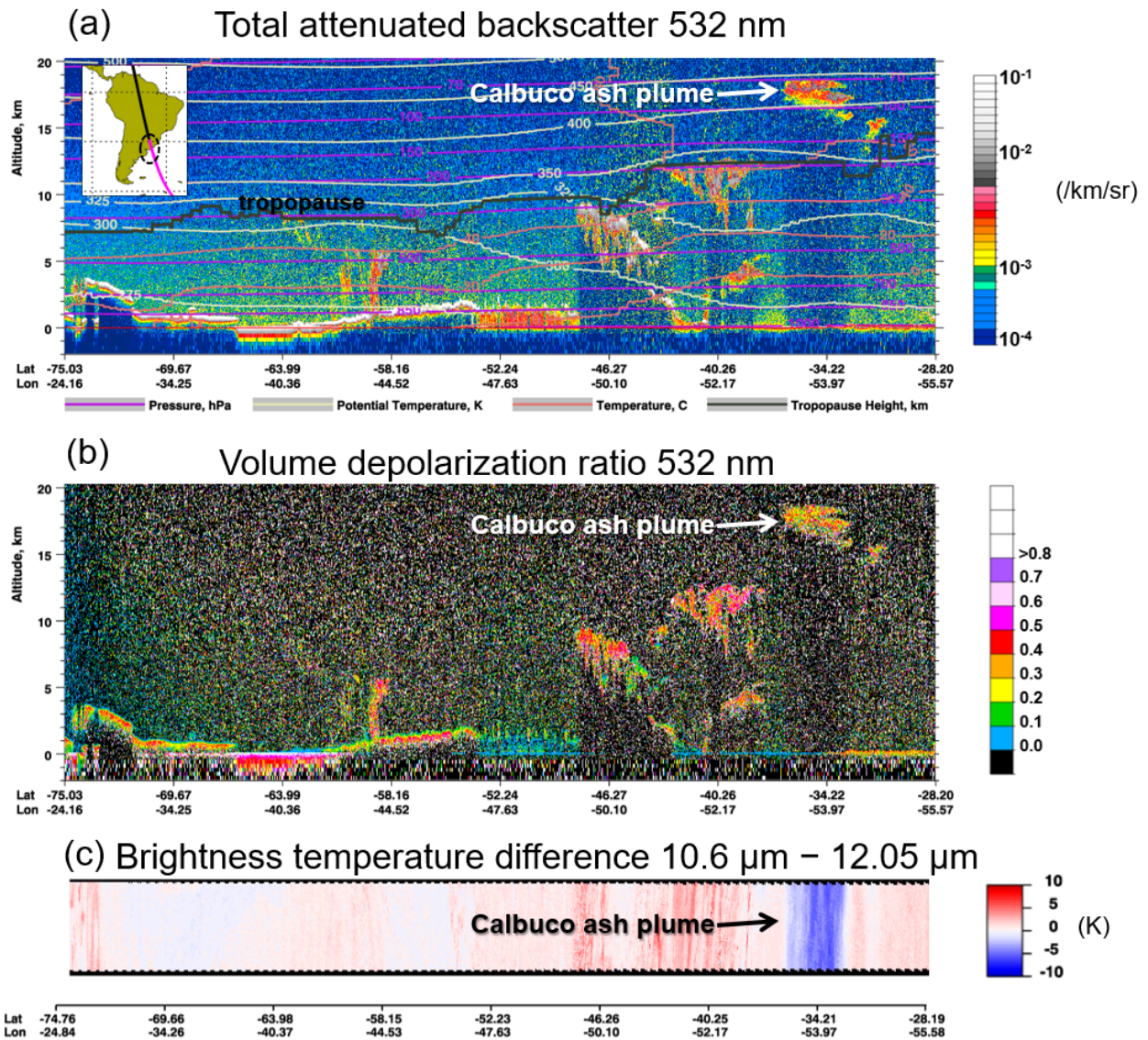


Figure S1. Version 4.5 subtype classification of unique layers for ash-dominant volcanic events, (a) Puyehue-Cordón Caulle in June 2011 and (b) Calbuco in April 2015 for the first two-weeks observed by CALIOP. Horizontal axis indicates number of aerosol samples within
 5 each 100 m range bin based on the top and base altitude of each unique layer. Dates and geographical regions indicated on the panels.



10 **Figure S2.** Observation of ash plume from Mt. Calbuco volcano eruption, acquired on 24 April 2015 at \sim 17:40 UTC. Panels (a) and (b) show CALIOP 532 nm total attenuated backscatter and volume depolarization ratio, respectively. Panel (c) shows the CALIPSO Imaging Infrared Radiometer brightness temperature difference. Inset panel denotes ground track and approximate location of the plume. Images acquired from the CALIPSO website (last access: 7 January 2022): https://www-calipso.larc.nasa.gov/products/lidar/browse_images/show_v4_detail.php?s=production&v=V4-10&browse_date=2015-04-24&orbit_time=17-31-56&page=1&granule_name=CAL_LID_L1-Standard-V4-10.2015-04-24T17-31-56ZD.hdf

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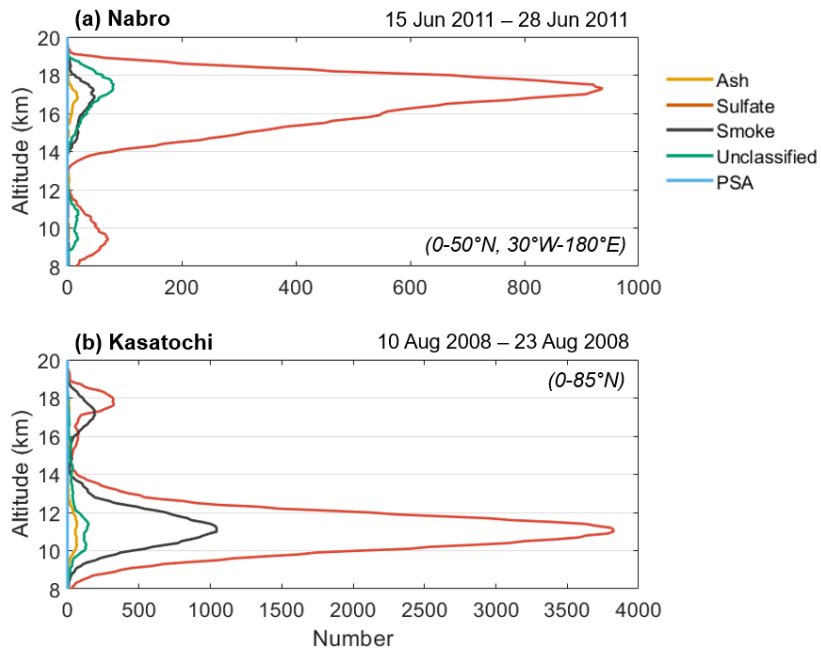
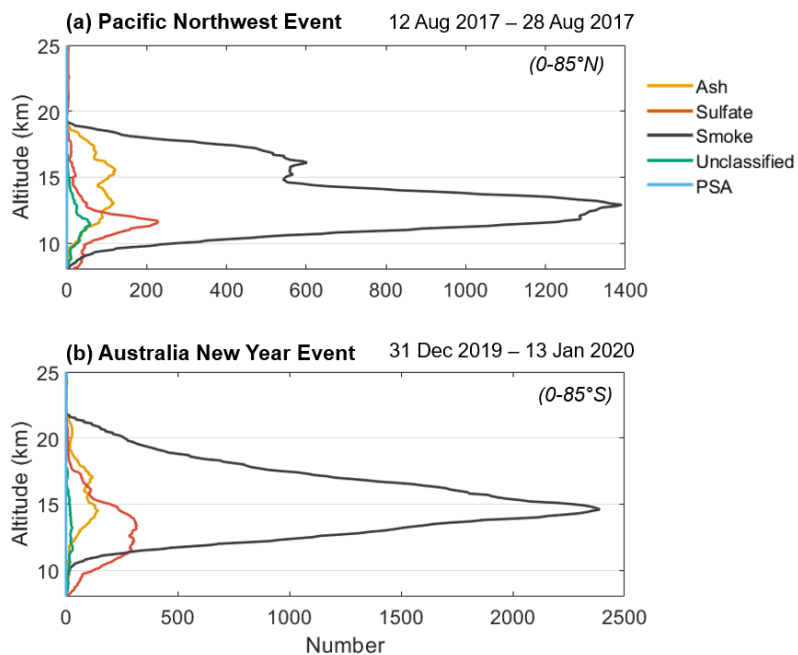
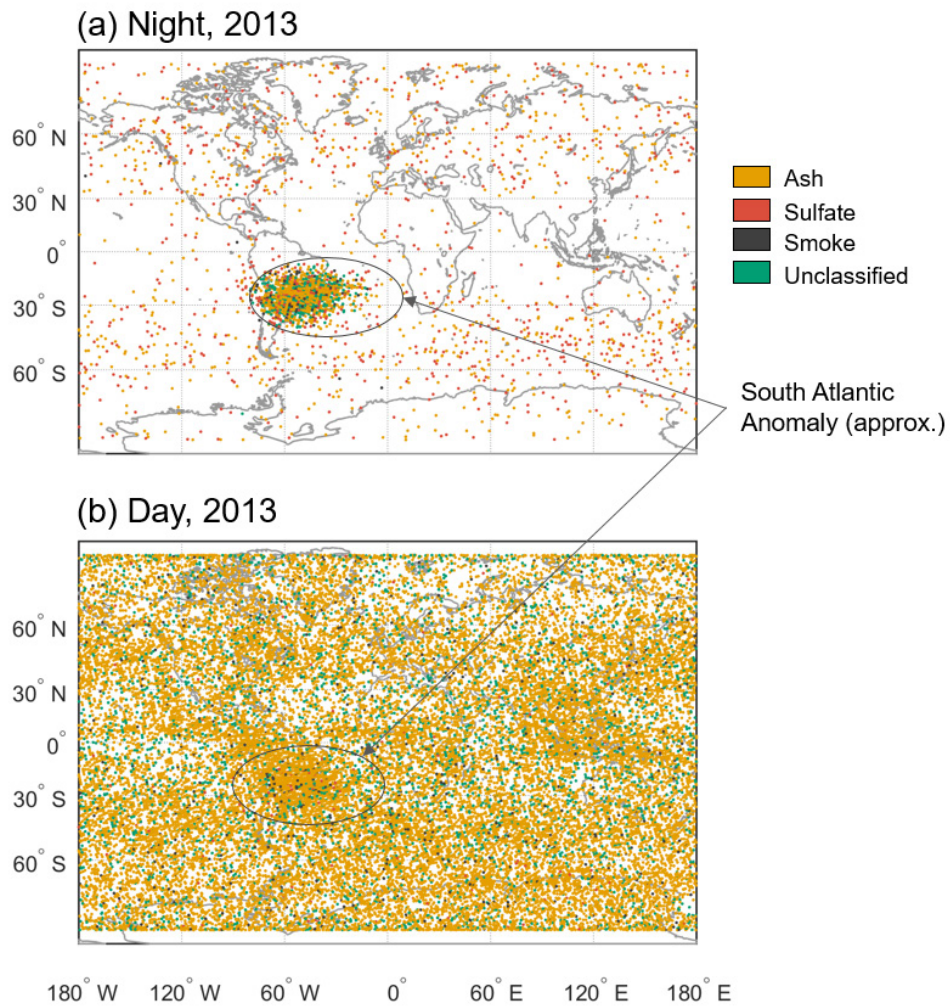


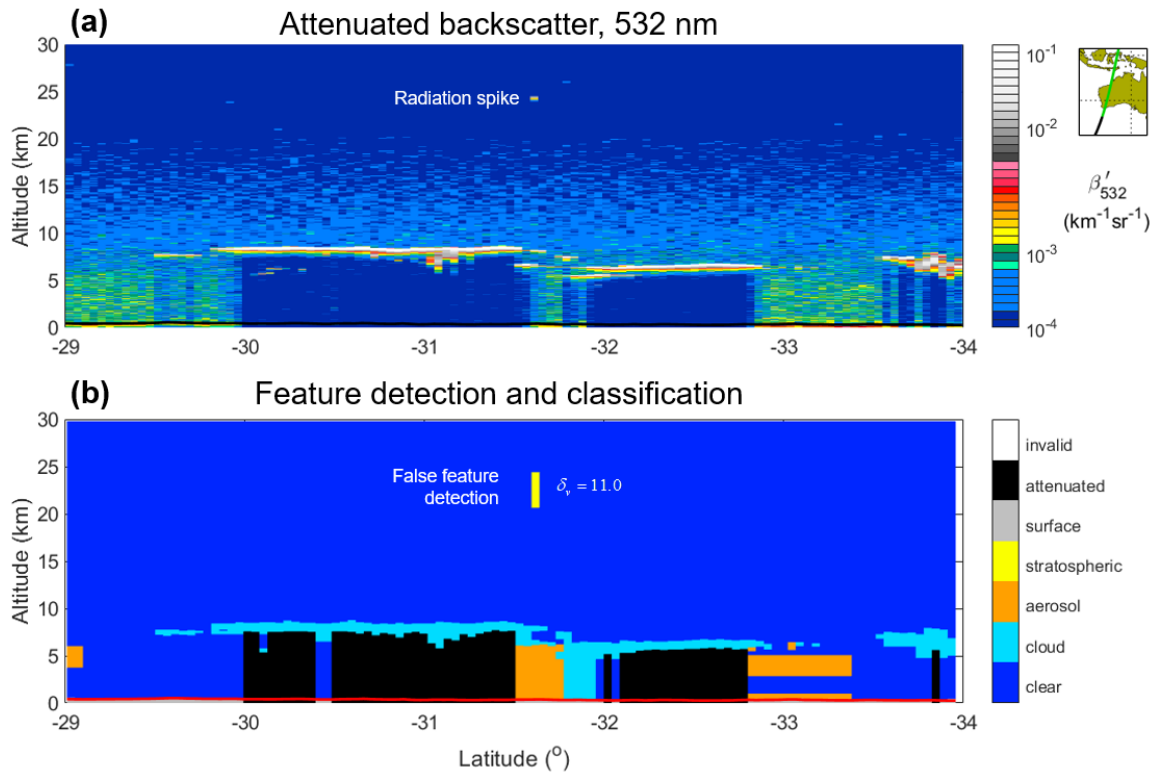
Figure S3. Version 4.5 subtype classification of unique layers for sulfate-dominant volcanic events, (a) Nabro in June 2011 and (b) Kasatochi in August 2008 for the first two-weeks observed by CALIOP. Horizontal axis indicates number of aerosol samples within each 100 m range bin based on the top and base altitude of each unique layer. Dates and geographical regions indicated on the panels.



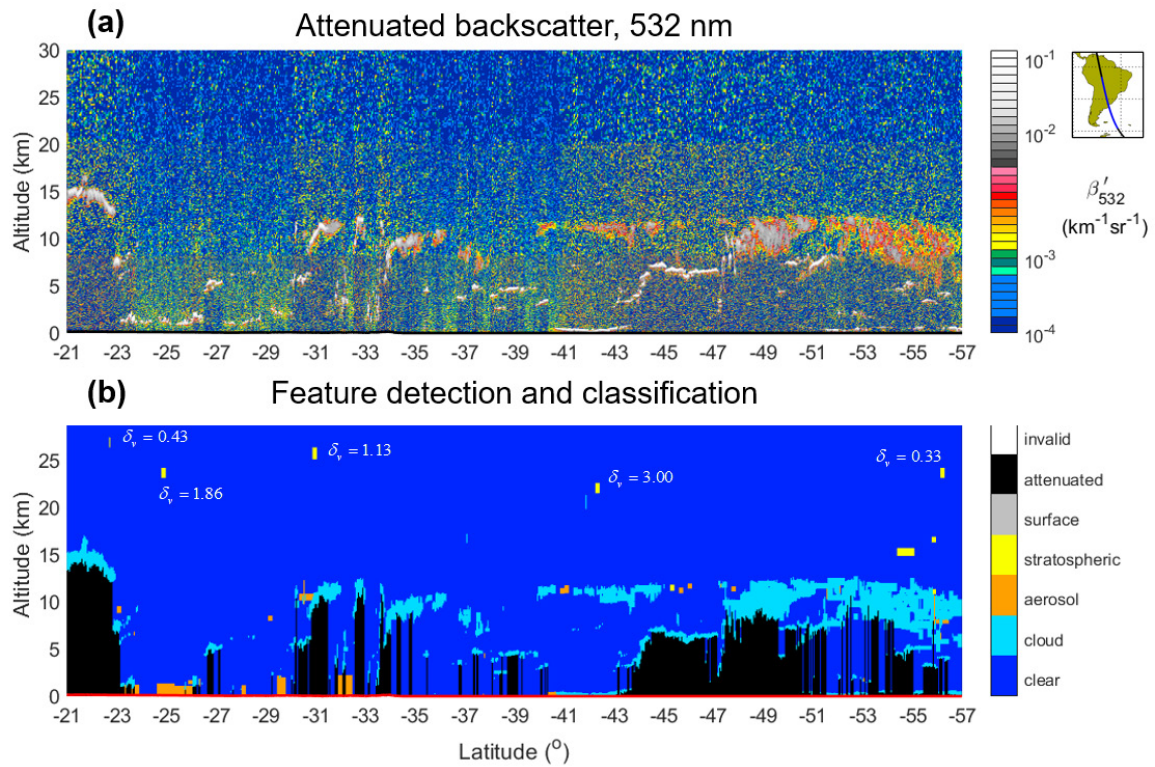
25 **Figure S4.** Version 4.5 subtype classification of unique layers for smoke-dominant events, (a) Pacific Northwest event in August 2017 and (b) Australian 2019/2020 New Year event for the first two-weeks observed by CALIOP. Horizontal axis indicates number of aerosol samples within each 100 m range bin based on the top and base altitude of each unique layer. Dates and geographical regions indicated on the panels.



30 **Figure S5.** Aerosol subtypes assigned to suspected false feature detections (stratospheric aerosol layers detected above 20 km) for the year 2013 at (a) night and (b) day. Layers classified as PSA are excluded.



35 **Figure S6.** Nighttime example of (a) CALIOP 532 nm attenuated backscatter and (b) V4.5 feature detection & classification for the granule 2013-01-01T16-52-04ZN. A radiation-induced current spike is noted at 24 km which causes a false feature detection in the stratosphere. The volume depolarization for the layer is noted in panel (b).



40 **Figure S7.** Daytime example over the South Atlantic Anomaly region of (a) CALIOP 532 nm attenuated backscatter and (b) V4.5 feature detection & classification for the granule 2013-02-11T17-35-36ZD. False feature detections occur in stratosphere due to radiation-induced current spikes and increased noise in the column due to sunlight reflecting off underlying clouds. The volume depolarization for several false feature detections are noted in panel (b).

The following tables list the CALIOP granules containing the manually classified stratospheric aerosol layers contributing to version 4.5 joint distributions in Fig. 6 and Table 1 in the main text. The optical property measurements from these layers were used to derive the depolarization thresholds required to discriminate between volcanic ash, sulfate, and smoke. The first column contains the granule identifier which appears in the filename of all CALIOP level 1B and level 2 files corresponding to the granule (i.e., the specific half-orbit). As an example, the first granule identifier below appears in the CALIOP V4.5 level 2 aerosol layer product filename as follows: CAL_LID_L2_05kmALay-Standard-V4-50.2011-06-17T02-40-12ZN.hdf.

The granule identifier contains the date and time of the starting profile of the granule, and an identifier for night or day (“N” or “D”) using the format: *YYYY-MM-DDTHH-MM-SSZ{N|D}*. From this information, the specific CALIOP granule used can be identified. The remaining columns contain the geographic bounding box containing the manually classified plume. All layers detected and classified as stratospheric aerosol by the level 2 algorithms within these bounding boxes contribute to the version 4.5 joint distributions, subject to quality filtering requirements (see main text for details).

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Puyehue-Cordón Caulle eruption, June 2011

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2011-06-17T02-40-12ZN	-63	-42	-40	-28	9	14
2011-06-17T04-19-07ZN	-71	-42	-72	-52	8	15
2011-06-17T05-58-03ZN	-50	-36	-80	-75	10	15
2011-06-18T01-44-35ZN	-62	-42	-24	-15	7.5	14
2011-06-18T01-44-35ZN	-41.5	-32	-14	-10	10.5	15
2011-06-18T03-23-30ZN	-53	-41	-43	-38	7	15
2011-06-19T00-48-58ZN	-76	-41	-31	0	7	15
2011-06-19T20-35-36ZN	-65	-54	50	57	9	14
2011-06-19T22-14-31ZN	-59	-41	30	38	11	14
2011-06-19T23-53-21ZN	-76	-47	-17	11	10	15
2011-06-20T21-18-49ZN	-60	-47	44	50	10	15
2011-06-22T12-52-04ZN	-59	-35	-179	179	10	15
2011-06-22T14-30-55ZN	-72	-41	134	155	9	14
2011-06-22T14-30-55ZN	-81	-35	60	156	8	14
2011-06-23T11-56-27ZN	-65	-41	-179	-167	11	14
2011-06-24T04-25-15ZN	-71	-53	-73	-59	8	14
2011-06-25T03-29-38ZN	-65	-47	-53	-42	9	13
2011-06-25T10-05-08ZN	-65	-47	-151	-141	10	15
2011-06-25T11-44-04ZN	-65	-47	-176	-166	11	14

2011-06-26T05-51-46ZN	-76	-65	-106	-88	9	14
2011-06-26T07-30-36ZN	-70	-50	-120	-102	10	15
2011-06-26T09-09-31ZN	-65	-47	-137	-127	10	15
2011-06-26T23-59-28ZN	-65	-50	-7	8	8	13
2011-06-27T01-38-19ZN	-53	-41	-17	-12	10	14
2011-06-27T04-56-04ZN	-70	-49	-81	-65	9	15
2011-06-27T06-34-59ZN	-60	-47	-95	-88	11	15
2011-06-27T08-13-50ZN	-59	-47	-119	-113	10	15
2011-06-27T09-52-45ZN	-51	-29	-140	-134	8	14
2011-06-27T23-03-46ZN	-70	-53	7	21	9	13
2011-06-28T00-42-42ZN	-65	-41	-11	2	10	15
2011-06-28T04-00-27ZN	-53	-29	-52	-44	10	14
2011-06-28T05-39-17ZN	-59	-47	-80	-74	10	15
2011-06-28T22-08-10ZN	-70	-41	20	40	8	13
2011-06-28T23-47-05ZN	-41	-35	15	17	9	14
2011-06-29T01-25-55ZN	-41	-29	-10	-5	10	14
2011-06-29T03-04-50ZN	-60	-41	-42	-34	10	14
2011-06-29T04-43-40ZN	-59	-47	-64	-61	10	14
2011-06-29T17-54-47ZN	-70	-41	84	103	8	14
2011-06-29T19-33-37ZN	-80	-65	25	66	10	14
2011-06-29T21-12-33ZN	-65	-41	41	53	9	14
2011-06-29T22-51-23ZN	-53	-41	24	29	10	13
2011-06-30T08-44-39ZN	-63	-47	-130	-121	9	14
2011-06-30T16-59-05ZN	-70	-41	98	117	9	14
2011-06-30T20-16-51ZN	-65	-47	55	65	8	14

Calbuco eruption, April 2015

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Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2015-04-23T18-27-28ZD	-45	-30	-69	-64	10	20
2015-04-24T05-13-09ZN	-38	-31	-67	-63	10	20
2015-04-24T17-31-56ZD	-40	-28	-56	-52	12	20
2015-04-25T04-17-42ZN	-40	-25	-52	-48	12	20
2015-04-26T01-43-15ZN	-38	-32	-13	-10	12.5	15
2015-04-26T03-22-10ZN	-32	-20	-37	-33	12	20
2015-04-26T15-40-52ZD	-31	-21	-31	-26	13	20

2015-04-26T17-19-42ZD	-27	-21	-55	-52	15	20
2015-04-27T14-45-20ZD	-40	-21	-16	-11	14	20
2015-04-27T16-24-10ZD	-28	-21	-41	-38	15	21
2015-04-27T23-52-11ZN	-44	-20	13	18	12	17
2015-04-28T01-31-06ZN	-38	-20	-10	-6	13	21
2015-04-28T03-09-56ZN	-32	-20	-33	-29	15	21
2015-04-28T04-48-52ZN	-28	-20	-57	-54	15	21
2015-04-28T12-10-53ZD	-44	-20	25	29	12	21
2015-04-28T13-49-48ZD	-38	-25	-2	2	15	21
2015-04-28T15-28-38ZD	-32	-20	-26	-23	15	21
2015-04-28T17-07-33ZD	-26	-15	-53	-50	18	22
2015-04-28T22-56-39ZN	-45	-18	26	32	13	20
2015-04-29T00-35-34ZN	-40	-21	4	8	15	20
2015-04-29T02-14-24ZN	-35	-21	-20	-17	15	22
2015-04-29T11-15-21ZD	-44	-18	38	42	13	20
2015-04-29T12-54-16ZD	-38	-20	12	16	15	20
2015-04-29T14-33-06ZD	-40	-26	-12	-7	16	22
2015-04-29T16-12-01ZD	-28	-18	-37	-34	18	22
2015-04-29T22-01-07ZN	-45	-20	40	46	11	20
2015-04-29T23-39-57ZN	-34	-21	19	23	15	20
2015-04-30T01-18-53ZN	-40	-22	-8	-3	15	22
2015-04-30T02-57-48ZN	-33	-21	-30	-27	15	22
2015-04-30T04-36-38ZN	-25	-18	-53	-50	18	22
2015-04-30T10-19-49ZD	-44	-20	52	58	13	20
2015-04-30T11-58-44ZD	-26	-20	25	28	15	20
2015-04-30T13-37-34ZD	-38	-14	0	7	13	22
2015-04-30T15-16-29ZD	-38	-25	-22	-18	15	22
2015-04-30T21-05-35ZN	-45	-21	54	61	13	20
2015-05-01T00-23-21ZN	-35	-15	7	13	15	22
2015-05-01T03-41-06ZN	-27	-18	-39	-36	15	20
2015-05-01T09-24-17ZD	-44	-19	65	71	14	20
2015-05-01T12-42-02ZD	-38	-13	16	19	15	22
2015-05-01T20-10-03ZN	-46	-20	70	74	14	20
2015-05-01T23-27-49ZN	-34	-18	21	24	15	22
2015-05-02T01-06-44ZN	-40	-10	-3	1	15	22
2015-05-02T08-28-45ZD	-37	-19	79	82	15	20
2015-05-02T11-46-30ZD	-37	-18	28	31	15	20

2015-05-02T13-25-20ZD	-42	-8	5	8	18	22
2015-05-02T19-14-26ZN	-35	-18	85	88	15	20

Chaitén eruption, May 2008

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2008-05-06T01-55-30ZN	-41	-33	-18	-14	10	15
2008-05-09T00-47-45ZN	-48	-42	-3	0	8	20
2008-05-10T04-48-53ZN	-48	-36	-61	-58	6	15

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Sarychev eruption, June 2009

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2009-06-17T13-40-12ZN	36	56	-173	-166	8	19
2009-06-17T12-47-52ZD	54	65	-166	-157	10	15
2009-06-17T22-41-14ZD	45	61	-157	-148	10	16
2009-06-18T00-20-04ZD	37	43	-174	-171	10	18
2009-06-18T03-37-49ZD	52	61	128	137	8	15
2009-06-18T12-44-35ZN	36	54	-159	-152	8	20
2009-06-18T21-45-32ZD	13	67	-156	-134	10	18
2009-06-18T23-24-27ZD	55	72	-173	-164	8	15
2009-06-19T10-56-38ZD	54	67	-140	-129	10	18
2009-06-19T11-48-59ZN	36	54	-145	-137	8	20
2009-06-19T16-45-34ZN	49	55	142	147	8	15
2009-06-19T17-32-09ZD	59	72	124	139	8	15
2009-06-19T20-49-55ZD	37	68	-142	-118	10	18
2009-06-20T10-53-17ZN	35	56	-132	-122	10	20
2009-06-20T11-39-52ZD	58	72	-150	-132	10	18
2009-06-20T13-18-42ZD	58	67	-179	-165	10	15
2009-06-20T16-36-32ZD	61	75	140	167	10	15
2009-06-20T18-15-23ZD	61	75	115	130	8	15
2009-06-20T19-54-18ZD	49	72	-128	-109	10	15
2009-06-20T21-33-08ZD	55	68	-146	-136	10	20
2009-06-21T02-29-49ZD	49	72	130	151	10	16

2009-06-21T09-05-19ZD	55	77	-115	-79	9	16
2009-06-21T10-44-15ZD	50	72	-150	-118	8	18
2009-06-21T11-36-35ZN	30	44	-143	-139	15	20
2009-06-21T12-23-05ZD	61	72	-156	-143	10	16
2009-06-21T13-15-25ZN	36	56	-166	-158	8	15
2009-06-21T14-54-20ZN	32	55	166	175	8	15
2009-06-21T15-40-50ZD	50	72	145	167	8	16
2009-06-21T18-58-36ZD	55	75	-116	-97	8	17
2009-06-21T20-37-31ZD	37	72	-139	-115	8	20
2009-06-21T22-16-21ZD	31	72	-167	-138	10	20
2009-06-22T08-09-43ZD	61	77	-92	-66	8	16
2009-06-22T09-48-33ZD	50	77	-130	-90	10	17
2009-06-22T10-40-53ZN	35	56	-129	-120	10	18
2009-06-22T11-27-28ZD	61	73	-142	-129	10	18
2009-06-22T13-06-18ZD	62	77	-163	-140	12	18
2009-06-22T13-58-38ZN	37	55	-177	-170	7	16
2009-06-22T15-37-34ZN	40	56	157	165	8	16
2009-06-22T18-02-59ZD	58	73	-102	-85	10	16
2009-06-22T19-41-49ZD	61	73	-125	-111	9	17
2009-06-22T21-20-44ZD	36	74	-158	-124	9	18
2009-06-22T22-59-39ZD	49	72	-175	-155	9	16
2009-06-23T05-35-10ZD	50	65	-70	-50	8	15
2009-06-23T06-27-30ZN	49	58	-61	-57	10	16
2009-06-23T07-14-01ZD	61	67	-79	-73	9	16
2009-06-23T08-52-56ZD	50	77	-150	-76	8	18
2009-06-23T10-31-46ZD	55	72	-130	-115	10	18
2009-06-23T11-24-06ZN	31	56	-140	-130	9	20
2009-06-23T12-10-41ZD	61	81	-153	-98	8	18
2009-06-23T13-03-01ZN	43	56	-161	-156	8	15
2009-06-23T13-49-36ZD	61	81	-178	-123	7	18
2009-06-23T14-41-52ZN	30	55	169	178	9	15
2009-06-23T15-28-27ZD	49	62	-49	-42	8	15
2009-06-23T20-25-07ZD	43	78	-160	-114	8	17
2009-06-23T22-03-58ZD	67	77	-175	-153	10	17
2009-06-24T01-21-43ZD	31	45	169	174	10	18
2009-06-24T04-39-28ZD	50	67	-50	-35	8	15
2009-06-24T06-18-24ZD	50	67	-80	-59	10	17

2009-06-24T09-36-09ZD	50	72	-150	-100	8	17
2009-06-24T10-28-29ZN	24	56	-128	-110	8	20
2009-06-24T11-15-04ZD	50	73	-150	-126	8	20
2009-06-24T13-46-15ZN	37	56	-176	-165	8	20
2009-06-24T14-32-50ZD	32	61	-36	-22	10	16
2009-06-24T16-11-40ZD	55	78	-89	-55	9	20
2009-06-24T21-08-21ZD	65	77	-162	-138	10	20
2009-06-24T22-47-11ZD	65	72	-179	-162	10	20
2009-06-25T03-43-51ZD	55	72	-50	-13	8	15
2009-06-25T04-36-12ZN	43	56	-35	-29	8	17
2009-06-25T05-22-47ZD	55	66	-70	-46	12	18
2009-06-25T10-19-22ZD	55	84	-160	-10	8	20
2009-06-25T11-11-42ZN	31	50	-138	-131	10	20
2009-06-25T11-58-18ZD	55	76	-160	-122	8	20
2009-06-25T13-37-08ZD	55	77	-179	-147	10	20
2009-06-25T18-33-48ZD	55	69	-101	-91	8	15
2009-06-25T21-51-34ZD	49	75	-172	-138	10	20
2009-06-26T03-40-35ZN	31	55	-25	-16	10	17
2009-06-26T05-19-25ZN	37	55	-47	-40	15	20
2009-06-26T10-16-05ZN	35	55	-123	-114	10	20
2009-06-26T11-54-56ZN	31	43	-148	-142	12	21
2009-06-26T12-41-31ZD	55	72	-165	-148	10	20
2009-06-26T13-33-51ZN	18	49	-177	-165	12	20
2009-06-26T14-20-21ZD	43	78	-59	-23	8	16
2009-06-26T15-12-41ZN	6	19	156	160	12	20
2009-06-26T15-59-16ZD	31	78	-84	-44	9	20
2009-06-26T19-17-02ZD	49	77	-134	-98	8	18
2009-06-26T22-34-47ZD	31	44	-147	-143	15	20
2009-06-26T22-34-47ZD	60	72	-168	-155	10	17
2009-06-27T02-44-53ZN	31	56	-10	-2	8	16
2009-06-27T04-23-43ZN	25	56	-37	-25	7	20
2009-06-27T05-10-18ZD	50	78	-60	-20	8	15
2009-06-27T08-28-03ZD	50	77	-105	-69	8	15
2009-06-27T12-38-09ZN	31	56	-160	-150	9	18
2009-06-27T13-24-44ZD	43	77	-45	-9	8	15

Kasatochi eruption, August 2008

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Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2008-08-10T11-49-30ZN	51	57	-143	-140	10	13
2008-08-11T10-53-51ZN	51	60	-127	-122	11	14
2008-08-11T12-32-41ZN	33	45	-158	-154	15	20
2008-08-12T08-19-15ZN	52	63	-89	-85	10	13
2008-08-12T11-37-00ZN	52	63	-139	-130	10	15
2008-08-13T09-02-25ZN	46	64	-102	-99	10	15
2008-08-13T10-41-20ZN	58	64	-122	-116	10	15
2008-08-14T04-49-00ZN	52	64	-36	-33	10	14
2008-08-14T06-27-55ZN	46	64	-64	-54	10	14
2008-08-14T08-06-45ZN	46	64	-82	-77	8	14
2008-08-14T09-45-40ZN	46	64	-109	-106	9	16
2008-08-14T11-24-30ZN	46	58	-137	-131	15	20
2008-08-15T07-11-02ZN	34	64	-79	-66	10	18
2008-08-15T08-49-57ZN	40	52	-100	-97	10	14
2008-08-15T10-28-47ZN	38	64	-126	-119	15	20
2008-08-16T02-57-34ZN	41	64	-14	1	8	15
2008-08-16T04-36-29ZN	59	64	-30	-24	9	15
2008-08-16T06-15-25ZN	41	64	-61	-51	8	17
2008-08-16T09-33-05ZN	47	65	-107	-102	15	20
2008-08-17T02-01-57ZN	37	65	0	15	9	13
2008-08-17T02-01-57ZN	39	64	0	14	9	14
2008-08-17T03-40-47ZN	47	65	-19	-10	9	15
2008-08-17T05-19-43ZN	41	65	-45	-37	10	18
2008-08-17T06-58-33ZN	35	47	-75	-71	10	20
2008-08-17T08-37-28ZN	41	59	-96	-92	15	20
2008-08-17T10-16-18ZN	41	53	-121	-117	15	20
2008-08-17T21-48-30ZN	41	65	67	77	9	15
2008-08-18T01-06-15ZN	41	59	14	23	8	15
2008-08-18T02-45-05ZN	47	65	-6	5	9	15
2008-08-18T04-24-01ZN	41	65	-30	-20	11	18
2008-08-18T06-02-51ZN	35	47	-59	-56	11	15
2008-08-18T09-20-36ZN	35	47	-109	-106	15	20
2008-08-18T10-59-32ZN	47	65	-126	-123	15	20

2008-08-18T20-52-48ZN	55	65	86	93	10	14
2008-08-19T00-10-33ZN	41	65	28	34	11	14
2008-08-19T01-49-23ZN	50	65	8	15	10	15
2008-08-19T03-28-19ZN	30	65	-18	-9	10	20
2008-08-19T08-24-54ZN	48	65	-91	-87	13	20
2008-08-19T23-14-51ZN	42	65	44	57	10	15
2008-08-20T00-53-41ZN	54	66	26	33	9	15
2008-08-20T02-32-37ZN	36	65	-7	8	9	20
2008-08-20T04-11-27ZN	54	66	-23	-19	10	15
2008-08-20T07-29-12ZN	36	54	-80	-77	15	20
2008-08-20T23-57-59ZN	48	66	36	47	10	15
2008-08-21T01-36-55ZN	36	66	8	21	9	20
2008-08-21T03-15-45ZN	30	60	-14	-10	10	20
2008-08-21T23-02-17ZN	49	66	53	61	10	15
2008-08-22T00-41-13ZN	43	66	22	31	10	17
2008-08-22T02-20-03ZN	40	66	0	3	10	18
2008-08-22T05-37-48ZN	49	66	-50	-47	10	20
2008-08-22T07-16-43ZN	30	66	-73	-68	15	20
2008-08-22T22-06-35ZN	37	66	59	75	10	18
2008-08-23T01-24-21ZN	45	67	16	19	10	16
2008-08-23T06-21-01ZN	43	61	-60	-56	15	20
2008-08-23T07-59-52ZN	31	55	-92	-82	15	20
2008-08-23T09-38-47ZN	49	67	-106	-103	10	15
2008-08-23T22-49-49ZN	49	67	52	56	10	20
2008-08-24T07-04-10ZN	43	55	-72	-69	15	20
2008-08-24T10-21-55ZN	50	67	-112	-109	9	15
2008-08-24T13-39-41ZN	49	67	-165	-161	10	20
2008-08-24T20-15-11ZN	50	67	90	104	10	16
2008-08-25T04-29-37ZN	38	50	-36	-32	15	20
2008-08-25T06-08-28ZN	44	61	-57	-54	15	20
2008-08-25T07-47-23ZN	25	44	-87	-83	15	20
2008-08-25T07-47-23ZN	44	67	-85	-73	9	15
2008-08-25T11-05-08ZN	38	62	-135	-125	8	14
2008-08-25T19-19-29ZN	44	67	102	118	9	15

Nabro eruption, June 2011

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Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2011-06-15T21-00-18ZN	37	49	76	81	12	17
2011-06-15T22-39-13ZN	37	49	51	54	14	19
2011-06-16T20-04-41ZN	37	55	90	94	13	17
2011-06-16T21-43-36ZN	37	43	65	68	15	20
2011-06-17T19-09-04ZN	37	55	104	109	13	17
2011-06-18T18-13-27ZN	25	55	116	121	14	20
2011-06-19T17-17-50ZN	20	50	128	136	15	20
2011-06-20T01-32-16ZN	-11	6	-3	0	15	20
2011-06-20T18-01-04ZN	19	43	115	118	15	20
2011-06-21T23-40-58ZN	13	31	29	33	15	20
2011-06-22T16-09-50ZN	20	37	145	148	15	20
2011-06-23T00-24-16ZN	13	43	19	23	15	20
2011-06-23T15-14-13ZN	19	37	159	162	15	20
2011-06-23T21-49-44ZN	7	31	58	61	17.5	20
2011-06-23T23-28-34ZN	19	37	37	40	14	20
2011-06-24T01-07-29ZN	17	43	11	16	14	20
2011-06-24T22-32-57ZN	7	37	50	54	15	20
2011-06-25T00-11-52ZN	24	47	28	32	14	20
2011-06-25T01-50-42ZN	17	43	-3	3	15	20
2011-06-25T23-16-10ZN	7	55	39	46	14	20
2011-06-26T22-20-33ZN	31	50	58	61	14	20

Okmok eruption, July 2008

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2008-07-13T13-05-00ZN	45	57	-162	-158	10	18
2008-07-17T11-01-17ZN	39	52	-133	-130	10	15
2008-07-18T10-05-35ZN	40	52	-119	-115	10	15

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Australian New Year (ANY) Event, Dec. 2019/Jan. 2020

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2020-01-01T13-04-22ZN	-47	-34	172	178	10	20
2020-01-01T02-20-45ZD	-55	-35	170	180	10	18
2020-01-02T01-20-09ZD	-53	-27	-173	-163	10	18
2020-01-02T12-03-45ZN	-50	-25	-172	-164	10	20
2020-01-03T00-19-37ZD	-40	-25	-158	-153	12	18
2020-01-03T09-24-38ZN	-60	-30	-140	-125	14	18
2020-01-03T11-03-13ZN	-59	-28	-162	-150	10	18
2020-01-03T23-19-05ZD	-66	-30	-142	-124	11	18
2020-01-03T21-40-29ZD	-58	-45	-113	-105	10	15
2020-01-04T00-57-35ZD	-66	-43	-164	-149	12	18
2020-01-04T08-24-06ZN	-65	-35	-125	-113	12	17
2020-01-04T10-02-36ZN	-65	-25	-152	-134	12	18
2020-01-04T11-41-11ZN	-50	-35	-168	-163	15	20
2020-01-04T20-39-58ZD	-24	-13	-106	-103	12	17
2020-01-04T22-18-28ZD	-66	-18	-129	-109	11	18
2020-01-04T23-57-03ZD	-72	-45	-146	-127	12	19
2020-01-05T07-23-29ZN	-65	-42	-109	-99	11	18
2020-01-05T10-40-35ZN	-60	-50	-160	-152	13	20
2020-01-05T22-56-26ZD	-67	-24	-137	-119	13	20
2020-01-06T06-22-57ZN	-61	-40	-94	-83	11	17
2020-01-06T08-01-32ZN	-65	-42	-119	-109	12	20
2020-01-06T08-01-32ZN	-23	-10	-105	-101	13	17
2020-01-06T09-40-03ZN	-54	-6	-138	-124	14	18
2020-01-06T20-17-24ZD	-65	-18	-100	-80	13	18
2020-01-06T21-55-54ZD	-61	-42	-118	-108	13	20
2020-01-07T05-22-25ZN	-65	-42	-80	-68	10	18
2020-01-07T07-00-55ZN	-55	-30	-100	-90	11	17
2020-01-07T08-39-31ZN	-65	-11	-130	-109	12	21
2020-01-07T11-04-11ZD	-73	-62	-167	-153	15	20
2020-01-07T19-16-47ZD	-66	-36	-80	-64	10	18
2020-01-07T22-33-53ZD	-65	-48	-127	-114	15	20
2020-01-08T01-04-48ZN	-43	-35	-6	-3	10	15
2020-01-08T04-21-53ZN	-65	-48	-70	-56	11	17

2020-01-08T06-00-24ZN	-60	-42	-87	-78	14	18
2020-01-08T07-38-54ZN	-65	-36	-111	-100	11	22
2020-01-08T07-38-54ZN	-35.9	-11	-101	-95	13	18
2020-01-09T03-21-16ZN	-65	-48	-49	-41	12	18
2020-01-09T04-59-52ZN	-78	-48	-75	-66	12	18
2020-01-09T08-16-52ZN	-54	-6	-119	-103	14	22
2020-01-09T11-33-57ZN	-24	-12	-158	-154	15	20
2020-01-09T23-49-49ZD	-36	-17	-153	-148	12	20
2020-01-10T02-20-44ZN	-60	-42	-32	-24	12	18
2020-01-10T03-59-15ZN	-60	-52	-58	-51	10	20
2020-01-10T07-16-20ZN	-54	-28	-102	-94	12	21
2020-01-10T08-54-50ZN	-48	-12	-125	-114	12	22
2020-01-10T09-41-00ZD	-54	-30	62	70	12	15
2020-01-11T01-20-13ZN	-60	-48	-17	-9	12	18
2020-01-11T07-54-18ZN	-55	-1	-112	-96	15	23
2020-01-11T09-32-49ZN	-42	-20	-133	-125	15	22
2020-01-11T21-02-35ZN	-55	-43	49	53	14	20
2020-01-12T01-58-11ZN	-55	-43	-23	-18	12	20
2020-01-12T03-36-41ZN	-65	-45	-52	-42	11	19
2020-01-12T08-32-17ZN	-50	-18	-120	-110	15	22
2020-01-12T10-10-52ZN	-40	-12	-140	-135	15	22
2020-01-12T20-02-03ZN	-58	-35	62	73	12	18
2020-01-13T07-31-45ZN	-52	-20	-107	-95	14	23
2020-01-13T09-10-15ZN	-38	-15	-126	-120	14	22
2020-01-13T10-48-50ZN	-37	-12	-149	-143	14	22
2020-01-13T12-27-20ZN	-65	-48	172	179.9	10	15
2020-01-13T15-44-26ZN	-61	-32	126	137	10	17
2020-01-13T23-57-02ZN	-65	-45	1	11	12	20
2020-01-14T01-35-37ZN	-49	-40	-15	-11.5	11	20
2020-01-14T08-09-43ZN	-51	-19	-115	-103	15	25
2020-01-14T09-48-13ZN	-43	-13	-136	-128	13	23
2020-01-14T13-05-19ZN	-65	-45	165	174	10	18
2020-01-14T14-43-49ZN	-61	-31	141	153	12	17
2020-01-14T21-18-00ZN	-65	-47	40	51	10	19
2020-01-15T08-47-41ZN	-43	-13	-121	-114	12	20
2020-01-15T10-26-17ZN	-65	-44	-155	-145	11	15
2020-01-15T10-26-17ZN	-43	-13	-144.5	-137	13	22

2020-01-15T12-04-47ZN	-63	-43	-179.9	-170	12	17
2020-01-15T12-50-57ZD	-74	-63	163	179.9	10	17
2020-01-15T15-21-52ZN	-60	-31	131	144	10	20
2020-01-15T17-00-22ZN	-65	-40	105	116	11	18
2020-01-16T06-08-39ZN	-65	-51	-91	-84	10	13
2020-01-16T07-47-09ZN	-55	-35	-112	-102	12	25
2020-01-16T09-25-45ZN	-43	-13	-130	-122	12	22
2020-01-16T11-04-15ZN	-63	-43	-165	-155	10	17
2020-01-16T15-59-50ZN	-63	-43	120	130	12	18
2020-01-17T05-08-07ZN	-63	-44	-76	-66	11	19
2020-01-17T06-46-37ZN	-63	-36	-100	-88	10	22
2020-01-17T10-03-43ZN	-44	-19	-140	-133	14	22
2020-01-17T13-20-43ZN	-44	-31	170	174	12	17
2020-01-17T16-37-49ZN	-44	-36	121	124	10	20
2020-01-17T19-54-54ZN	-44	-25	72	77	12	17
2020-01-17T20-41-04ZD	-40	-22	-104	-99	12	18
2020-01-18T04-07-35ZN	-56	-44	-56	-51	13	20
2020-01-18T07-24-36ZN	-62	-26	-109	-95	12	25
2020-01-18T09-03-11ZN	-44	-19	-125	-118	13	22
2020-01-18T15-37-17ZN	-62	-26	127	141	12	18
2020-01-19T05-31-44ZD	-81	-64	-147	-72	15	25
2020-01-19T06-24-04ZN	-62	-44	-94	-85	12	25
2020-01-19T08-02-34ZN	-38	-20	-108	-103	12	18
2020-01-19T22-49-26ZN	-62	-44	19	28	12	20
2020-01-20T02-06-26ZN	-60	-38	-30	-19	12	20
2020-01-20T07-02-02ZN	-62	-32	-104	-91	12	22
2020-01-21T06-01-30ZN	-65	-40	-91	-79	15	25

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Pacific Northwest (PNW) Event, August 2017

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2017-08-17T08-42-08ZN	53	66	-94	-87	10	18
2017-08-18T04-28-41ZN	47	59	-65	-27	8	16
2017-08-18T06-07-31ZN	35	47	-62	-57	5	20
2017-08-18T07-46-26ZN	53	66	-80	-71	10	18
2017-08-18T18-26-12ZD	62	69	-102	-26	9	15

2017-08-19T01-54-03ZN	42	54	3	8	8	16
2017-08-19T03-32-59ZN	42	60	-20	-13	10	16
2017-08-19T05-11-49ZN	36	65	-47	-33	8	17
2017-08-19T06-50-44ZN	54	65	-65	-57	8	20
2017-08-19T12-33-50ZD	38	50	-2	4	10	18
2017-08-19T14-12-45ZD	44	62	-32	-23	10	15
2017-08-19T15-51-35ZD	38	65	-60	-46	10	20
2017-08-20T00-58-21ZN	42	67	17	31	10	16
2017-08-20T02-37-17ZN	42	60	-6	0	8	16
2017-08-20T04-16-07ZN	36	54	-33	-27	9	17
2017-08-20T08-20-22ZD	55	68	45	60	10	15
2017-08-20T08-20-22ZD	65	81	-93	-3	7	15
2017-08-20T08-20-22ZD	66	74	42	51	10	15
2017-08-20T09-59-13ZD	65	83	-118	-25	8	15
2017-08-20T11-38-08ZD	73	82	-94	-7	8	15
2017-08-20T14-55-53ZD	37	62	-44	-32	10	20
2017-08-20T18-13-39ZD	66	78	-120	-95	10	15
2017-08-21T00-02-39ZN	48	67	33	45	8	16
2017-08-21T01-41-35ZN	25	54	1	12	9	17
2017-08-21T06-38-10ZN	42	56	-68	-61	10	15
2017-08-21T07-24-40ZD	65	78	-78	-55	10	15
2017-08-21T07-24-40ZD	66	73	56	65	9	14
2017-08-21T09-03-36ZD	65	82	-104	-30	8	15
2017-08-21T12-21-16ZD	43	56	0	4	10	17
2017-08-21T14-00-11ZD	43	62	-30	-20	7	20
2017-08-21T21-28-07ZN	37	67	68	84	7	14
2017-08-21T23-06-58ZN	45	67	45	59	7	16
2017-08-22T00-45-48ZN	24	49	15	23	8	17
2017-08-22T02-24-43ZN	49	61	0	5	10	18
2017-08-22T04-03-38ZN	31	65	-33	-20	8	20
2017-08-22T11-25-34ZD	25	55	13	23	10	20
2017-08-22T14-43-20ZD	31	49	-33	-27	15	20
2017-08-22T18-01-05ZD	49	67	-94	-82	9	15
2017-08-22T22-11-16ZN	43	67	59	69	8	16
2017-08-22T23-50-06ZN	31	68	31	49	10	17
2017-08-23T01-29-01ZN	25	61	4	15	10	20
2017-08-23T03-07-51ZN	35	67	-17	0	13	20

2017-08-23T07-12-07ZD	43	67	68	80	11	17
2017-08-23T08-04-32ZN	43	67	-89	-75	8	15
2017-08-23T10-29-52ZD	36	49	30	35	10	20
2017-08-23T13-47-38ZD	35	49	-20	-13	14	21
2017-08-23T15-26-33ZD	28	39	-41	-36	15	20
2017-08-23T21-15-34ZN	37	68	71	88	9	18
2017-08-23T22-54-29ZN	43	67	46	62	8	18
2017-08-24T00-33-19ZN	25	68	18	38	11	18
2017-08-24T02-12-09ZN	43	62	0	8	12	20
2017-08-24T03-51-05ZN	31	44	-30	-23	15	20
2017-08-24T17-48-36ZD	49	60	-85	-79	9	15
2017-08-24T20-19-52ZN	44	61	87	96	10	17
2017-08-25T01-16-27ZN	31	62	9	23	12	20
2017-08-25T02-55-23ZN	32	67	-15	0	13	22
2017-08-25T04-34-13ZN	19	38	-43	-38	15	20
2017-08-25T05-20-43ZD	42	50	105	109	10	16
2017-08-25T06-59-33ZD	42	76	27	86	10	16
2017-08-25T07-51-58ZN	38	56	-87	-80	10	15
2017-08-25T10-17-24ZD	48	65	22	33	13	18
2017-08-25T11-56-14ZD	42	61	0	11	15	21
2017-08-25T13-35-04ZD	36	49	-16	-11	10	21
2017-08-25T15-13-59ZD	24	42	-38	-33	15	20
2017-08-25T16-06-24ZN	44	62	150	160	8	15
2017-08-25T21-03-00ZN	32	63	72	86	8	20
2017-08-25T21-49-30ZD	68	78	65	91	10	20
2017-08-25T22-41-55ZN	56	68	57	67	12	20
2017-08-25T23-28-20ZD	68	79	42	69	11	17
2017-08-26T00-20-45ZN	44	68	27	41	8	20
2017-08-26T01-59-41ZN	38	68	0	17	14	20
2017-08-26T04-25-01ZD	36	54	119	125	9	16
2017-08-26T05-17-26ZN	55	68	-42	-32	8	14
2017-08-26T07-42-46ZD	41	76	42	74	13	18
2017-08-26T11-00-32ZD	41	65	12	25	15	20
2017-08-26T12-39-22ZD	40	53	-5	0	15	22
2017-08-26T13-31-47ZN	26	51	-175	-168	10	17
2017-08-26T15-10-42ZN	50	68	167	179	8	16
2017-08-26T16-49-33ZN	38	48	138	142	11	17

2017-08-26T18-28-28ZN	44	52	114	119	10	17
2017-08-26T20-07-18ZN	38	60	88	99	8	18
2017-08-26T21-46-13ZN	44	69	65	81	12	18
2017-08-26T22-32-38ZD	67	78	56	82	11	17
2017-08-26T23-25-03ZN	44	68	41	55	13	18
2017-08-27T01-03-54ZN	44	68	15	31	11	22
2017-08-27T01-50-24ZD	68	81	7	68	8	14
2017-08-27T02-42-49ZN	32	50	-12	-5	15	22
2017-08-27T04-21-44ZN	60	68	-27	-18	7	14
2017-08-27T06-47-04ZD	47	59	80	87	13	18
2017-08-27T08-25-55ZD	71	80	9	45	8	15

North America wildfires, July 2014

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2014-07-16T09-34-06ZN	51	58	-109	-104	10	15
2014-07-16T18-35-02ZD	52	60	-98	-91	10	15
2014-07-17T17-39-20ZD	46	65	-86	-75	10	15
2014-07-18T06-50-22ZD	55	75	-90	-65	8	15
2014-07-18T07-42-42ZN	34	59	-85	-76	8	16
2014-07-18T16-43-43ZD	45	70	-77	-59	10	15
2014-07-18T18-22-33ZD	40	46	-87	-84	10	16
2014-07-19T06-47-00ZN	40	59	-70	-62	10	16
2014-07-19T17-26-51ZD	40	48	-74	-71	12	16
2014-07-20T04-12-28ZN	52	58	-27	-23	10	15
2014-07-20T05-51-18ZN	40	52	-56	-51	8	17
2014-07-20T13-13-24ZD	53	76	-35	-12	8	15
2014-07-21T04-55-41ZN	34	41	-44	-41	12	17
2014-07-21T18-53-13ZD	55	70	95	114	10	20
2014-07-22T04-46-29ZD	55	75	-60	-22	8	18
2014-07-22T13-00-55ZD	51	70	-22	-10	10	15
2014-07-22T17-57-31ZD	40	70	100	128	8	15
2014-07-23T08-47-28ZD	74	79	14	33	10	15
2014-07-23T12-05-13ZD	63	75	-17	-1	10	15
2014-07-23T17-01-49ZD	55	70	128	142	8	15
2014-07-24T16-06-07ZD	65	76	150	168	8	15

2014-08-01T08-40-51ZD	67	77	-96	-75	10	15
2014-08-01T16-55-12ZD	61	71	-86	-72	8	15
2014-08-02T07-45-09ZD	67	78	-82	-60	8	15
2014-08-02T15-59-30ZD	62	78	-85	-60	8	15
2014-08-03T06-49-27ZD	66	78	-69	-45	8	15
2014-08-03T15-03-53ZD	71	78	-71	-55	8	15
2014-08-04T05-53-45ZD	61	65	-59	-54	10	13
2014-08-04T05-53-45ZD	78	81	-31	-0.5	9	13
2014-08-04T09-11-31ZD	81	82	-49	0	8	13
2014-08-04T10-50-26ZD	77	81	-74	-5	8	13
2014-08-04T15-47-01ZD	48	72	-66	-48	8	13
2014-08-04T19-04-47ZD	48	54	-100	-84	10	13
2014-08-05T04-11-33ZN	46	51	-30	-26	9	13
2014-08-05T04-58-03ZD	74	82	-31	0	8	13
2014-08-05T06-36-58ZD	67	82	-64	-9	10	13
2014-08-05T08-15-49ZD	78	82	-65	0	8	13
2014-08-05T08-15-49ZD	77	82	0	20	8	13
2014-08-05T09-54-44ZD	77	82	-58	0	9	13
2014-08-05T13-12-29ZD	50	56	-13	-10	9	13
2014-08-05T23-05-46ZD	72	79	50	73	8	13
2014-08-06T05-41-17ZD	73	81	-30	0	9	13
2014-08-06T08-59-02ZD	76	83	-50	0	9	13
2014-08-06T10-37-57ZD	78	81	-67	-2	9	13
2014-08-06T12-16-47ZD	55	66	-7	0	10	13
2014-08-06T15-34-33ZD	66	73	-64	-56	10	12
2014-08-06T15-34-33ZD	58	60	-51	-49	10	13
2014-08-06T20-31-14ZD	69	77	86	110	9	12
2014-08-07T01-27-49ZD	61	67	6	10	9	12
2014-08-07T03-06-44ZD	63	72	-16	-4	9	12
2014-08-07T06-24-30ZD	78	81	-35	-3	8	13
2014-08-07T09-42-15ZD	77	83	-53	0	9	13
2014-08-07T11-21-05ZD	59	70	0	10	10	13
2014-08-07T11-21-05ZD	76	82	-76	-11	9	13
2014-08-07T17-56-36ZD	36	58	-85	-77	7	15
2014-08-08T10-25-24ZD	71	77	0	15	10	13
2014-08-08T13-43-09ZD	65	79	-176	-144	10	13
2014-08-08T17-00-54ZD	35	42	-64	-62	9	15

2014-08-08T23-36-25ZD	68	74	40	50	10	12
2014-08-09T01-15-20ZD	72	78	22	41	10	12
2014-08-09T03-46-31ZN	45	51	-24	-21	8	14
2014-08-09T05-25-26ZN	45	55	-49	-41	8	15
2014-08-09T07-50-51ZD	78	82	0	35	10	13
2014-08-10T02-50-49ZN	45	52	-10	-7	9	13
2014-08-10T06-55-09ZD	78	81	0	45	10	12
2014-08-10T11-51-45ZD	42	58	5	13	11.5	15
2014-08-11T01-55-12ZN	51	64	6	15	12	15
2014-08-11T17-31-34ZD	73	80	140	170	11.5	13
2014-08-11T19-10-29ZD	79	82	139	175	12	15
2014-08-11T20-49-19ZD	79	82	150	179	11	13
2014-08-11T22-28-15ZD	78	81	140	179	11.5	13
2014-08-12T01-46-00ZD	64	70	3	10	12	15
2014-08-12T16-35-52ZD	69	80	150	178	10	15
2014-08-12T18-14-47ZD	48	82	145	170	11	13
2014-08-12T23-11-23ZD	75	91	120	174	10	15
2014-08-13T00-50-18ZD	69	78	140	160	10	15
2014-08-13T02-29-08ZD	58	72	-10	0	11	14
2014-08-13T17-19-05ZD	72	80	140	179	11	13
2014-08-13T18-11-25ZN	43	52	119	123	8	12
2014-08-13T18-57-55ZD	75	82	130	179	10	13
2014-08-13T23-54-36ZD	76	81	108	164	11	14
2014-08-14T02-25-51ZN	52	58	0	3	11	14
2014-08-15T01-30-10ZN	58	64	16	21	11	14
2014-08-15T12-09-56ZD	48	52	4	6	11	15
2014-08-15T13-48-46ZD	76	81	-158	-96	11	15
2014-08-15T15-27-36ZD	79	82	-160	-90	11	15
2014-08-15T17-06-32ZD	79	82	-160	-110	11	15
2014-08-15T18-45-22ZD	76	81	-170	-117	11	15
2014-08-16T11-14-14ZD	70	78	-130	-117	10	14
2014-08-16T12-53-04ZD	73	80	-155	-130	10	15
2014-08-16T19-28-35ZD	68	80	-178	-117	10	15
2014-08-17T10-18-27ZD	65	76	-123	-111	10	15
2014-08-17T11-57-22ZD	70	75	-140	-128	9	14
2014-08-19T08-27-03ZD	66	77	-94	-85	10	13

Australian bushfires, December 2006

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2006-12-20T01-36-57ZN	-47	-40	-18	-15	8	13
2006-12-20T03-15-47ZN	-60	-35	-50	-39	8	15
2006-12-20T04-54-42ZN	-42	-35	-67	-63	8	15
2006-12-20T06-33-33ZN	-40	-27	-89	-86	8	15
2006-12-21T02-20-10ZN	-56	-39	-32	-27	10	17
2006-12-21T03-59-05ZN	-52	-34	-54	-49	8	17
2006-12-21T05-37-56ZN	-34	-28	-75	-71	8	16
2006-12-21T07-16-51ZN	-34	-20	-98	-95	8	16
2006-12-21T11-20-56ZD	-55	-40	39	44	8	15
2006-12-21T12-59-47ZD	-49	-37	12	17	8	15
2006-12-21T14-38-42ZD	-49	-19	-16	-9	10	18
2006-12-21T17-56-27ZD	-35	-27	-65	-62	10	16
2006-12-21T22-06-48ZN	-58	-34	28	40	8	17
2006-12-22T01-24-33ZN	-52	-20	-17	-6	10	18
2006-12-22T03-03-28ZN	-41	-34	-38	-35	10	16
2006-12-22T04-42-19ZN	-38	-28	-61	-58	8	15
2006-12-22T10-25-19ZD	-58	-29	47	59	10	16
2006-12-22T13-43-05ZD	-45	-21	-4	5	8	18
2006-12-22T15-21-55ZD	-43	-37	-24	-21	10	15
2006-12-22T21-11-11ZN	-34	-25	52	56	10	16
2006-12-22T22-50-01ZN	-50	-34	23	29	8	18
2006-12-23T00-28-56ZN	-45	-25	0	6	10	18
2006-12-23T15-18-53ZN	-70	-45	128	135	8	15
2006-12-23T18-36-39ZN	-58	-28	84	94	8	17
2006-12-23T20-15-34ZN	-42	-22	64	71	10	18
2006-12-23T21-54-24ZN	-42	-25	39	45	10	18
2006-12-23T23-33-19ZN	-62	-50	8	12	8	15
2006-12-24T05-16-15ZD	-67	-55	141	145	8	14
2006-12-24T06-55-10ZD	-43	-31	101	105	10	15
2006-12-24T08-34-05ZD	-40	-19	73	77	10	16
2006-12-24T14-23-16ZN	-65	-40	147	154	8	14
2006-12-24T17-41-02ZN	-46	-28	101	108	10	17
2006-12-24T19-19-57ZN	-40	-27	79	83	10	17

2006-12-24T20-58-47ZN	-34	-25	55	59	10	18
2006-12-25T04-20-38ZD	-55	-37	142	148	8	13
2006-12-25T05-59-33ZD	-49	-20	112	121	10	15
2006-12-25T16-45-25ZN	-46	-17	116	124	8	16
2006-12-25T18-24-20ZN	-40	-28	93	97	8	16
2006-12-25T23-21-00ZN	-52	-40	14	17	8	12
2006-12-26T12-32-02ZN	-58	-52	174	177	8	15
2006-12-26T15-49-48ZN	-41	-22	130	137	8	17
2006-12-26T17-28-43ZN	-46	-30	105	110	9	17
2006-12-26T23-11-39ZD	-65	-55	-133	-128	8	14
2006-12-27T02-29-29ZD	-45	-27	169	173	8	16
2006-12-27T08-18-40ZN	-60	-46	-124	-120	8	14
2006-12-27T13-15-20ZN	-43	-23	168	173	8	17

Black Saturday Australian bushfires, February 2009

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Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2009-02-09T13-28-34ZN	-36	-20	169	174	11	20
2009-02-10T12-33-03ZN	-44	-28	-179	-175	10	20
2009-02-11T11-37-31ZN	-44	-27	-165	-160	15	20
2009-02-12T12-20-54ZN	-44	-22	-175	-169	14	20
2009-02-13T11-25-27ZN	-46	-32	-164	-161	12	20
2009-02-13T13-04-17ZN	-40	-21	175	180	11	20
2009-02-14T12-08-50ZN	-38	-22	-171	-167	14	20
2009-02-14T13-47-41ZN	-34	-18	165	168	12	19
2009-02-15T07-55-33ZN	-52	-30	-113	-110	13	18
2009-02-15T09-34-23ZN	-50	-34	-136	-132	13	18
2009-02-15T11-13-18ZN	-38	-30	-157	-154	14	20
2009-02-15T12-52-14ZN	-30	-16	-180	-176	14	20

Siberian wildfires, May 2012

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2012-05-12T11-31-08ZN	41	60	-141	-134	11	14

2012-05-15T08-44-27ZN	29	35	-104	-99	9	13
2012-05-15T08-44-27ZN	47	56	-96	-92	6	11
2012-05-16T04-31-05ZN	47	55	-34	-29	9	13

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Siberian wildfires, June 2007

Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2007-06-10T17-05-39ZN	28	43	132	135	5	13
2007-06-12T11-56-39ZN	31	49	-149	-146	12	18
2007-06-13T11-01-02ZN	36	43	-135	-132	14	17
2007-06-13T15-57-43ZN	31	49	151	154	13	17
2007-06-16T09-53-06ZN	25	43	-121	-116	13	17

Canadian wildfires, July–August 2007

These granules contributed to V4.2 joint distributions, but not for V4.5. They are shown in Fig. 7 in the main text as examples of tropospheric smoke plumes.

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Granule identifier	Latitude minimum (°)	Latitude maximum (°)	Longitude minimum (°)	Longitude maximum (°)	Altitude minimum (km)	Altitude maximum (km)
2007-07-02T06-34-55ZN	37	49	-180	180	5	12
2007-07-21T08-43-54ZN	46	52	-180	180	7	10
2007-07-22T07-48-12ZN	26	44	-180	180	4	8
2007-07-23T08-31-25ZN	53	59	-180	180	5	10
2007-07-31T07-41-29ZN	42	49	-180	180	7	13
2007-08-14T07-52-48ZN	30	40	-180	180	4	8
2007-08-15T06-57-06ZN	28	44	-180	180	4	8
2007-08-16T06-01-24ZN	41	48	-180	180	4	8
2007-08-17T08-23-27ZN	39	47	-180	180	6	11