

Accuracy analysis of the 2014–2015 Global Shuttle Radar Topography Mission (SRTM) 1 arc-sec C-Band height model using International Global Navigation Satellite System Service (IGS) Network

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Supplementary data

Supplementary data

Supplementary data: Details of the IGS stations used in this study.

Sl. No.	Station No.	IGS Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90		SRTM C-30		SRTM X-30		C-90		C-30		X-30	
							Height [m]	Error [m]	Height [m]	Error [m]	Height [m]	Error [m]	Error [m]	Error [m]	Error [m]	Error [m]		
1	1	Les Abymes	France	16.2622	-61.5275	-25.00	-34.02	-32.02	x	9.02	7.02	x	x	x	x	x	x	
2	3	Salisbury	Australia	-34.7289	138.6472	38.20	30.17	30.17	30.00	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.20	
3	5	Addis Ababa	Ethiopia	9.0350	38.7664	2439.15	2439.56	2473.12	2438.00	-0.41	-33.96	1.15	-33.96	-33.96	-33.96	1.15	1.15	
4	6	Aira	Japan	31.8242	130.5997	314.64	306.91	307.91	298.00	7.73	6.73	6.73	6.73	6.73	6.73	16.64	16.64	
5	7	Ajaccio	France	41.9275	8.7625	99.00	88.60	90.60	91.00	10.40	8.40	8.40	8.40	8.40	8.40	8.00	8.00	
6	8	Victoria	Canada	48.3897	-123.4870	32.00	26.01	26.01	x	6.00	6.00	6.00	6.00	6.00	x	x	x	
7	9	Algonquin Park	Canada	45.9589	-78.7138	202.00	382.62	384.62	x	-180.62	-182.62	x	-180.62	-182.62	x	x	x	
8	10	Alice Springs	Australia	-23.6700	133.8855	603.36	604.32	604.32	604.00	-0.96	-0.96	-0.96	-0.96	-0.96	-0.96	-0.64	-0.64	
9	12	Colorado Springs	USA	38.8031	-104.5240	1912.49	1896.39	1895.39	x	16.10	17.10	x	16.10	17.10	x	x	x	
10	13	Ankara	Turkey	39.8875	32.7586	974.80	979.89	981.89	x	-5.09	-7.09	x	-5.09	-7.09	x	x	x	
11	14	Los Angeles	Chile	-37.3386	-71.5319	745.40	745.40	744.40	734.00	0.00	1.00	1.00	1.00	1.00	1.00	11.40	11.40	
12	15	Arequipa	Peru	-16.4656	-71.4927	2488.92	2493.56	2494.56	2489.00	-4.64	-5.64	-0.08	-4.64	-5.64	-0.08	-0.08	-0.08	
13	16	Arti	Russia	56.4297	58.5606	247.51	242.20	243.20	237.00	5.31	4.31	10.51	5.31	4.31	10.51	10.51	10.51	
14	17	Pago Pago	USA	-14.3261	-170.7220	53.70	47.17	47.17	x	6.53	6.53	x	6.53	6.53	x	x	x	
15	18	Whangaparaoa Peninsula	New Zealand	-36.6028	174.8344	132.00	127.58	130.58	129.00	4.42	1.42	3.00	4.42	1.42	3.00	3.00	3.00	
16	19	Azusa	USA	34.1261	-117.8960	144.75	146.70	145.70	x	-1.95	-0.95	x	-1.95	-0.95	x	x	x	
17	20	Badary	Russia	51.7697	102.2350	811.40	797.15	798.15	793.00	14.25	13.25	18.40	14.25	13.25	18.40	18.40	18.40	
18	21	Baie Comeau	Canada	49.1869	-68.2633	27.50	26.16	27.16	29.00	1.34	0.34	-1.50	1.34	0.34	-1.50	-1.50	-1.50	
19	23	Cibinong	Indonesia	-6.4900	106.8500	158.18	160.45	161.45	155.00	-2.27	-3.27	3.18	-2.27	-3.27	3.18	3.18	3.18	
20	24	Bamfield	Canada	48.8353	-125.1350	11.10	15.27	14.27	x	-4.17	-3.17	x	-4.17	-3.17	x	x	x	
21	25	Bangalore	India	13.0344	77.5117	831.90	825.86	825.86	819.00	6.04	6.04	12.90	6.04	6.04	12.90	12.90	12.90	
22	26	Bar Harbor	USA	44.3950	-68.2216	6.80	0.11	0.11	x	6.69	6.69	x	6.69	6.69	x	x	x	
23	27	Bridgetown	Barbados	13.0881	-59.6091	-38.60	-42.56	-40.56	x	3.96	1.96	x	3.96	1.96	x	x	x	
24	29	Manama	Bahrain	26.2092	50.6081	-13.90	-23.63	-23.63	x	9.73	9.73	x	9.73	9.73	x	x	x	
25	31	Temecula	USA	33.5783	-117.6470	470.06	144.92	145.92	x	325.14	324.14	x	325.14	324.14	x	x	x	
26	32	Cotonou	Benin	6.3847	2.4500	30.60	27.13	32.72	x	3.47	-2.12	x	3.47	-2.12	x	x	x	
27	33	Fangshan	China	39.6086	115.8925	87.41	75.05	77.05	74.00	12.36	10.36	13.41	12.36	10.36	13.41	13.41	13.41	
28	34	Beijing	China	40.2453	116.2241	118.60	105.44	102.44	97.00	13.16	16.16	21.60	13.16	16.16	21.60	21.60	21.60	
29	35	Blythe	USA	33.6103	-114.7140	85.90	86.91	86.91	x	-1.01	-1.01	x	-1.01	-1.01	x	x	x	
30	36	Borowa Gora	Poland	52.4750	21.3528	139.90	121.31	122.31	x	18.59	17.59	x	18.59	17.59	x	x	x	
31	37	Bogota	Colombia	4.6400	-74.8083	2576.78	269.88	270.88	267.00	2306.89	2305.89	2309.78	2306.89	2305.89	2309.78	2309.78	2309.78	
32	38	Borowiec	Poland	52.1003	17.6667	124.00	108.12	107.12	104.00	15.88	16.88	20.00	15.88	16.88	20.00	20.00	20.00	
33	39	Brasilia	Brazil	-15.9475	-47.8777	1106.04	1102.31	1101.31	x	3.73	4.73	x	3.73	4.73	x	x	x	
34	40	Brewster	USA	48.1314	-119.6820	238.63	228.05	230.05	231.00	10.57	8.57	7.63	10.57	8.57	7.63	7.63	7.63	
35	41	Eusebio	Brazil	-3.8775	-38.4255	21.70	20.47	19.47	x	1.23	2.23	x	1.23	2.23	x	x	x	
36	42	Bermuda	UK	32.3703	-64.6963	-11.60	-24.42	-22.42	x	12.82	10.82	x	12.82	10.82	x	x	x	
37	43	Brest	France	48.3806	-4.4967	65.80	60.47	62.47	61.00	5.33	3.33	4.80	5.33	3.33	4.80	4.80	4.80	

Supplementary data

Supplementary data: (Continued.)

Sl. No.	Station No.	IGS Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90 Height [m]	SRTM C-30 Height [m]	SRTM X-30 Height [m]	C-90 Error [m]	C-30 Error [m]	X-30 Error [m]
38	44	Brussels	Belgium	50.7981	4.3586	158.30	146.52	145.52	149.00	11.78	12.78	9.30
39	45	Bucuresti	Romania	44.4639	26.1258	143.20	119.51	120.51	120.00	23.69	22.69	23.20
40	47	San Martin	Argentina	-34.5736	-58.5191	48.80	37.19	37.19	38.00	11.61	11.61	10.80
41	48	Bolzano - Bozen	Italy	46.4989	11.3367	328.80	311.56	309.56	x	17.24	19.24	x
42	49	Cagliari	Italy	39.1358	8.9728	238.40	225.56	232.56	x	12.84	5.84	x
43	50	Gatineau	Canada	45.5850	-75.8072	235.00	229.34	226.34	x	5.66	8.66	x
44	51	Capoterra	Italy	39.1358	8.9728	238.00	217.56	232.56	x	20.44	5.44	x
45	53	Ogasawara	Japan	27.0675	142.1950	104.21	96.05	97.05	93.00	8.16	7.16	11.21
46	54	Ogasawara	Japan	27.0956	142.1844	208.83	159.21	181.21	182.00	49.62	27.62	26.83
47	55	Ceduna	Australia	-31.8667	133.8097	144.82	144.74	145.74	144.00	0.08	-0.92	0.82
48	56	Caucete	Argentina	-31.6022	-68.2325	703.00	679.00	686.00	692.00	24.00	17.00	11.00
49	57	Toro	Nigeria	10.1231	9.1183	916.70	913.48	922.29	x	3.22	-5.59	x
50	58	Changchun	China	43.7906	125.4433	268.30	264.60	264.60	x	3.70	3.70	x
51	59	San Gabriel Mountains	USA	34.3333	-118.2610	1567.51	1038.54	1022.54	1033.00	528.97	544.97	534.51
52	60	Cachoeira Paulista	Brazil	-22.6872	-44.9852	617.42	614.15	617.15	x	3.27	0.26	x
53	61	Wharekauri	New Zealand	-43.7356	-176.6170	75.70	73.77	74.77	x	1.93	0.93	x
54	62	Chumysh	Kazakhstan	42.9986	74.7511	716.33	685.05	692.05	x	31.28	24.28	x
55	64	Chilliwack	Canada	49.1567	-122.8330	170.00	19.92	20.92	22.00	150.08	149.08	148.00
56	65	Pasadena	USA	34.1367	-118.1270	215.35	208.08	207.08	x	7.27	8.27	x
57	66	Claremont	USA	34.1100	-117.7080	373.63	378.05	378.05	x	-4.42	-4.42	x
58	67	Sylmar	USA	34.3531	-118.4110	1137.99	1125.27	1134.27	1138.00	12.72	3.72	-0.01
59	68	Saipan	USA	15.2297	145.7430	64.40	61.10	60.10	x	3.30	4.30	x
60	69	Cocos (Keeling) Island	Australia	-12.1883	96.8339	-35.22	-33.83	-34.83	-36.00	-1.39	-0.39	0.78
61	72	Copiapo	Chile	-27.3844	-70.3383	479.20	460.85	468.85	464.00	18.35	10.35	15.20
62	73	Coso Junction	USA	35.9822	-117.8080	1455.16	1448.49	1455.49	x	6.68	-0.32	x
63	74	Coyhaique	Chile	-45.5142	-71.8922	476.00	469.37	468.37	467.00	6.63	7.63	9.00
64	75	Simeiz	Ukraine	44.4133	33.9911	365.80	361.25	363.25	x	4.56	2.56	x
65	76	Yucaipa	USA	34.0392	-117.9970	688.82	68.04	68.04	x	620.78	620.78	x
66	77	Christiansted	USA	17.7569	-64.5844	-31.96	-29.30	-34.30	-26.00	-2.66	2.34	-5.96
67	78	Patumwan	Thailand	13.7358	100.5338	76.06	-17.51	-11.51	1.00	93.57	87.57	75.06
68	80	Darwin	Australia	-12.8436	131.1327	125.20	123.15	125.15	x	2.05	0.05	x
69	82	De Aar	South Africa	-30.6653	23.9928	1321.70	1318.86	1314.63	1315.00	2.84	7.07	6.70
70	84	Diego Garcia Island	U.K. Territory	-7.2697	72.3703	-64.75	-65.59	-66.59	x	0.84	1.84	x
71	85	Durmid Hill	USA	33.3897	-115.7880	-83.05	-84.12	-83.12	x	1.07	0.07	x
72	86	Delft	Netherlands	51.9861	4.3875	74.30	43.48	45.48	42.00	30.82	28.82	32.30
73	87	Metzoki Dragot	Israel	31.5928	35.3925	120.30	23.43	24.43	19.00	96.88	95.88	101.30
74	88	Penticton	Canada	49.3225	-119.6250	542.00	533.70	533.70	535.00	8.30	8.30	7.00

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Sl. No.	Station No.	IGS Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90 Height [m]	SRTM X-30 Height [m]	C-90 Error [m]	C-30 Error [m]	X-30 Error [m]
75	89	Lac Du Bonnet	Canada	50.2589	-95.8661	251.00	241.27	239.27	9.73	11.73	9.00
76	90	Dubrovnik	Croatia	42.6500	18.1106	454.30	445.99	447.99	8.31	6.31	x
77	92	Dunedin	New Zealand	-45.8836	170.5972	389.00	365.73	374.73	23.27	14.27	13.00
78	93	Roquetes	Spain	40.8208	0.4920	107.90	100.13	98.13	7.77	9.77	x
79	96	Eastport	USA	44.9086	-66.9922	30.40	26.40	25.40	4.00	5.00	0.40
80	97	Escuminac	Canada	47.0733	-64.7986	-16.02	-19.34	-20.34	3.32	4.32	x
81	98	Faaa	Tahiti	-17.5553	-149.6140	12.35	11.26	10.26	1.09	2.09	x
82	100	Faleolo	Samoa	-13.8322	-171.9990	48.00	48.82	45.82	-0.82	2.18	x
83	101	Port Stanley	Falkland Islands	-51.6936	-57.8741	50.84	46.83	49.83	4.01	1.01	5.84
84	102	Frankfurt / Main	Germany	50.0906	8.6650	178.20	150.15	150.15	28.05	28.05	x
85	103	Cfs Flin Flon	Canada	54.7256	-101.9780	320.00	307.02	309.02	12.98	10.98	10.00
86	104	Santa Cruz Das Flores	Portugal	39.4539	-31.1263	79.90	74.26	74.26	5.64	5.64	x
87	105	Fredericton	Canada	45.9331	-66.6588	95.90	91.85	90.85	4.05	5.05	-2.10
88	106	Funchal	Portugal	32.6481	-16.9075	78.50	75.76	75.76	2.74	2.74	x
89	107	Ganovce	Slovakia	49.0347	20.3231	745.20	743.27	741.27	1.93	3.93	x
90	108	Genova	Italy	44.4194	8.9211	137.00	130.72	142.72	6.28	-5.72	x
91	109	Puerto Ayora	Ecuador	-0.7431	-90.3036	1.79	2.98	3.98	-1.19	-2.19	x
92	110	Kiev	Ukraine	50.3642	30.4967	226.80	210.37	210.37	16.43	16.43	x
93	113	Greenbelt	USA	39.0217	-76.8269	14.50	16.56	18.56	-2.05	-4.05	x
94	115	Goldstone	USA	35.4253	-116.8890	986.68	967.82	967.82	18.85	18.85	x
95	117	Ondrejov	Czech Republic	49.9136	14.7856	592.60	588.17	589.17	4.43	3.43	x
96	119	Caussols	France	43.7547	6.9206	1319.30	1313.94	1315.94	5.36	3.36	-2.70
97	120	Graz	Austria	47.0672	15.4936	538.30	525.43	525.43	12.88	12.88	13.30
98	121	Dededo	Guam	13.5892	144.8683	201.92	203.80	202.80	-1.88	-0.88	x
99	122	Urumqi	China	43.4711	87.1772	2049.20	2024.11	2024.11	25.09	25.09	x
100	123	Guatemala City	Guatemala	14.5903	-90.5202	1519.87	1512.54	1513.54	7.33	6.33	x
101	124	Mangilao	USA	13.4333	144.8027	134.70	130.26	130.26	4.44	4.44	x
102	125	Halat Ammar	Saudi Arabia	29.1389	36.1000	861.68	856.01	859.01	5.67	2.66	-2.32
103	126	Pretoria	South Africa	-25.8869	27.7075	1555.00	1562.23	1562.92	-7.23	-7.92	x
104	128	Hailsham	United Kingdom	50.8672	0.3360	76.50	71.02	71.02	5.48	5.48	9.50
105	129	Hailsham	United Kingdom	50.8675	0.3340	83.30	73.02	75.02	10.28	8.28	9.30
106	130	Halifax	Canada	44.6836	-63.6113	3.10	-4.69	-0.68	7.79	3.79	x
107	131	Honolulu	USA	21.3033	-157.8640	22.00	18.32	17.32	3.68	4.68	x
108	132	Cambridge	USA	38.5889	-76.1302	-28.00	-33.01	-31.01	5.01	3.01	x
109	133	Hermannus	South Africa	-34.4247	19.2231	63.00	23.56	23.56	3.37	39.44	x
110	134	Hobart	Australia	-42.8047	147.4386	41.13	39.49	41.49	1.64	-0.36	2.13
111	136	Holberg	Canada	50.6403	-128.1350	560.00	525.84	538.84	34.16	21.16	x

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Supplementary data: (Continued.)

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112	138	Hollydale	USA	33.9244	-118.1680	-6.71	-5.15	-6.15	x	-1.56	-0.56	x
113	139	Krugerdsorp	South Africa	-25.8900	27.6869	1414.30	1414.26	1380.95	x	0.04	33.35	x
114	140	Hermitage	United Kingdom	51.4536	-1.2839	163.10	155.32	153.32	152.00	7.78	9.78	11.10
115	141	Hermitage	United Kingdom	51.4539	-1.2839	163.10	154.32	154.32	148.00	8.78	8.78	15.10
116	142	Huegelheim	Germany	47.8339	7.5961	278.40	271.22	272.22	273.00	7.19	6.18	5.40
117	143	Hyderabad	India	17.4172	78.5508	441.68	436.00	436.00	439.00	5.68	5.68	2.68
118	144	Torino	Italy	45.0150	7.6394	316.60	293.11	292.11	301.00	23.49	24.49	15.60
119	145	Bangalore	India	13.0211	77.5703	843.71	847.80	844.80	842.00	-4.08	-1.08	1.71
120	146	Aguascalientes	Mexico	21.8561	-102.2840	1888.35	1870.12	1874.12	x	18.23	14.23	x
121	149	Iquique	Chile	-20.2736	-70.1316	38.90	38.58	40.58	x	0.32	-1.68	x
122	150	Irkutsk	Russia	52.2189	104.3161	502.10	490.46	494.46	x	11.65	7.65	x
123	153	Palestine Street	Iraq	33.3414	44.4383	72.30	35.78	42.78	41.00	36.52	29.52	31.30
124	154	Easter Island	Chile	-27.1250	-109.3440	112.49	107.00	104.00	x	5.50	8.49	x
125	155	Istanbul	Turkey	41.1044	29.1917	147.20	198.21	211.21	x	-51.01	-64.01	x
126	156	Jozefoslaw	Poland	52.0978	21.3222	152.50	151.26	149.26	x	1.24	3.24	x
127	157	Jozefoslaw	Poland	52.0972	21.3167	141.40	135.27	135.27	x	6.13	6.13	x
128	158	Pasadena	USA	34.2047	-118.1730	423.98	418.23	412.23	408.00	5.75	11.75	15.98
129	159	Karratha	Australia	-20.9814	117.9722	109.25	63.81	63.81	62.00	45.43	45.43	47.25
130	160	Katherine	Australia	-14.3761	132.1533	184.48	184.95	183.95	x	-0.48	0.52	x
131	162	Port Aux Francais	Kerguelen Islands	-49.3514	70.2556	74.06	71.03	71.03	x	3.03	3.03	x
132	163	Koganei	Japan	35.7103	139.4880	123.50	118.76	119.76	124.00	4.74	3.74	-0.50
133	164	Khabarovsk	Russia	48.5214	135.4611	130.60	50.46	50.46	49.00	80.14	80.14	81.60
134	168	Kitab	Uzbekistan	39.1400	66.8800	643.00	611.25	611.25	x	31.75	31.75	x
135	170	Kokee Park, Waimea,	USA	22.1264	-159.6650	1167.52	1161.68	1162.68	x	5.84	4.84	x
136	171	Kootwijk	Netherlands	52.1783	5.8097	97.90	88.40	87.40	88.00	9.50	10.50	9.90
137	172	Koumac	New Caledonia	-20.5586	164.2872	84.17	85.02	87.02	x	-0.85	-2.85	x
138	173	Kourou	French Guyana	5.2522	-52.8061	-25.57	-24.16	-21.16	x	-1.41	-4.41	x
139	174	Kashima	Japan	35.9553	140.6577	57.90	47.52	52.52	x	10.38	5.38	x
140	175	Kunming	China	25.0294	102.7972	1986.20	1977.07	1979.07	1983.00	9.13	7.13	3.20
141	176	Kuujuuarapik	Canada	55.2783	-77.7455	-0.50	-10.01	-8.01	0.00	9.51	7.51	-0.50
142	177	Lae	Papua New Guinea	-6.6736	146.9933	140.35	135.18	133.18	134.00	5.17	7.17	6.35
143	178	Olesztyn	Poland	53.8925	20.6700	187.00	183.28	183.28	184.00	3.72	3.72	3.00
144	179	Long Beach	USA	33.7878	-118.2030	-27.58	-31.95	-31.95	x	4.37	4.37	x
145	180	Lucknow	India	26.9125	80.9558	50.50	57.72	58.72	x	-7.23	-8.23	x
146	182	Leipzig	Germany	51.3539	12.3742	178.40	159.43	157.43	166.00	18.97	20.97	12.40
147	183	Lhasa	China	29.6572	91.1039	3622.00	3617.34	3616.34	3617.00	4.66	5.66	5.00
148	184	Le Lamentin	France	14.5947	-60.9961	-27.00	-32.64	-30.64	x	5.64	3.64	x

Supplementary data

Station		IGS Station	IGS Height										C-90	C-30	X-30	
Sl. No.	No.	Station	Country	Latitude	Longitude	[m]	Height [m]	SRTM C-90	SRTM C-30	SRTM X-30	Height [m]	Error [m]	Height [m]	Error [m]	Height [m]	Error [m]
149	185	Roque De Los Muchachos	Spain	28.7639	-17.8938	2207.00	2192.40	2198.40	2198.40	x	14.60	8.60	x	x	x	x
150	186	La Plata	Argentina	-34.9067	-57.9322	29.90	42.89	45.89	45.89	36.00	-12.99	-15.99	36.00	-15.99	-6.10	-6.10
151	187	La Rochelle	France	46.1589	-1.2192	57.90	52.05	52.05	52.05	50.00	5.85	5.85	50.00	5.85	7.90	7.90
152	188	Macquarie Island	Southern Ocean	-54.4994	158.9358	-6.69	-16.76	-16.76	-16.76	x	10.07	10.07	x	10.07	x	x
153	190	Robledo	Spain	40.4292	-4.2497	829.50	826.76	825.76	825.76	x	2.74	3.74	x	2.74	x	x
154	191	Magadan	Russia	59.5758	150.7700	361.93	359.23	358.23	358.23	358.00	2.70	3.70	x	2.70	3.70	3.93
155	192	Malindi	Kenya	-2.9961	40.1939	-20.40	-23.49	-34.22	-34.22	x	3.09	13.82	x	3.09	13.82	x
156	193	Male Airport	Republic of Maldives	4.1886	73.5264	-92.00	-93.51	-95.51	-95.51	x	1.51	3.51	x	1.51	3.51	x
157	194	Managua	Nicaragua	12.1489	-86.2488	71.00	72.60	71.60	71.60	x	-1.60	-0.60	x	-1.60	-0.60	x
158	196	Marseille	France	43.2789	5.3539	61.80	66.38	57.38	57.38	54.00	-4.58	4.42	x	-4.58	4.42	7.80
159	197	Maspalomas	Spain	27.7636	-15.6333	197.30	194.81	156.81	156.81	x	2.50	40.50	x	2.50	40.50	x
160	198	Matera	Italy	40.6492	16.7044	534.50	529.63	529.63	529.63	x	4.87	4.87	x	4.87	4.87	x
161	199	Matera	Italy	40.6492	16.7044	535.60	529.63	529.63	529.63	x	5.97	5.97	x	5.97	5.97	x
162	200	Haleakala, Maui	USA	20.7067	-156.2560	3062.00	3053.52	3060.52	3060.52	x	8.48	1.48	x	8.48	1.48	x
163	202	Mbarara	Uganda	-0.6014	30.7378	1337.65	1335.95	1384.74	1384.74	x	1.71	-47.08	x	1.71	-47.08	x
164	203	Ogasawara	Japan	24.2900	153.9786	35.66	32.31	32.31	32.31	x	3.35	3.35	x	3.35	3.35	x
165	205	Fort Davis	USA	30.6806	-104.1500	2004.48	1926.76	1929.76	1929.76	x	77.72	74.72	x	77.72	74.72	x
166	206	Mendelevo	Russia	56.0214	37.2144	257.40	242.38	240.38	240.38	239.00	15.02	17.02	x	15.02	17.02	18.40
167	207	Mendelevo	Russia	56.0275	37.2236	254.80	225.38	226.38	226.38	224.00	29.42	28.42	x	29.42	28.42	30.80
168	208	Medicina	Italy	44.5200	11.6467	50.00	51.39	51.39	51.39	x	-1.39	-1.39	x	-1.39	-1.39	x
169	211	Mafikeng	South Africa	-25.8050	25.5400	1310.90	1314.92	1299.02	1299.02	x	-4.02	11.88	x	-4.02	11.88	x
170	212	Malargue	Argentina	-35.7772	-69.3980	1554.15	1552.87	1554.87	1554.87	1541.00	1.28	-0.72	x	1.28	-0.72	13.15
171	213	Mykolaiv	Ukraine	46.9728	31.9728	94.70	78.39	79.39	79.39	x	16.31	15.31	x	16.31	15.31	x
172	214	Mizusawa	Japan	39.1353	141.1327	117.00	105.23	106.23	106.23	103.00	11.77	10.77	x	11.77	10.77	14.00
173	215	Mauna Kea	USA	19.8014	-155.4560	3755.00	67.99	3751.99	3751.99	x	3687.01	3.01	x	3687.01	3.01	x
174	217	Obninsk	Russia	55.1150	36.5697	182.61	181.14	182.14	182.14	178.00	1.47	0.46	x	1.47	0.46	4.61
175	218	Obninsk	Russia	55.1150	36.5694	182.63	182.14	182.14	182.14	177.00	0.49	0.49	x	0.49	0.49	5.63
176	219	Melbourne	Australia	-37.8294	144.9752	40.00	35.59	35.59	35.59	33.00	4.41	4.41	x	4.41	4.41	7.00
177	220	Laguna Mountains	USA	32.8900	-116.4200	1842.55	1833.47	1834.47	1834.47	x	9.08	8.08	x	9.08	8.08	x
178	221	Morpeth	United Kingdom	55.2128	-1.6856	144.40	142.89	147.89	147.89	147.00	1.51	-3.49	x	1.51	-3.49	-2.60
179	222	Christchurch	New Zealand	-43.7028	172.6547	154.68	143.16	139.16	139.16	138.00	11.52	15.52	x	11.52	15.52	16.68
180	223	Mattersburg	Austria	47.7378	16.4042	294.00	286.78	281.78	281.78	283.00	7.22	12.22	x	7.22	12.22	11.00
181	224	Mitaka	Japan	35.6794	139.5613	109.00	97.23	99.23	99.23	98.00	11.77	9.77	x	11.77	9.77	11.00
182	225	Nain	Canada	56.5369	-61.6886	33.48	7.24	11.24	11.24	x	26.24	22.24	x	26.24	22.24	x
183	226	Namas	Saudi Arabia	19.2114	42.4472	2703.22	1776.89	1777.89	1777.89	x	926.34	925.34	x	926.34	925.34	x
184	227	Nanose Bay	Canada	49.2947	-124.8630	6.00	26.67	23.67	23.67	19.00	-20.67	-17.67	x	-20.67	-17.67	-13.00
185	228	Nicosia	Cyprus	35.1408	33.3964	155.00	185.00	185.00	185.00	x	-30.00	-30.00	x	-30.00	-30.00	x

Supplementary data

Supplementary data: (Continued.)

Sl. No.	Station No.	IGS Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90 Height [m]	SRTM C-30 Height [m]	SRTM X-30 Height [m]	C-90 Error [m]	C-30 Error [m]	X-30 Error [m]
186	229	Boulder	USA	39.9950	-105.2620	1648.49	1637.65	1639.65	x	10.84	8.84	x
187	230	Alofi	Niue	-19.0767	-169.9260	90.10	88.92	87.92	x	1.18	2.18	x
188	231	Libreville	Gabon	0.3539	9.6722	31.48	34.02	35.99	x	-2.54	-4.51	x
189	232	North Liberty	USA	41.7717	-91.5750	207.06	205.25	205.25	x	1.81	1.81	x
190	233	New Norcia	Australia	-31.0486	116.1927	234.98	233.36	235.36	234.00	1.63	-0.37	0.98
191	234	Noto	Italy	36.8761	14.9897	126.20	127.05	128.05	x	-0.85	-1.85	x
192	235	Novosibirsk	Russia	55.0306	82.9094	149.98	105.27	105.27	105.00	44.72	44.72	44.98
193	236	Ottawa	Canada	45.4542	-75.6238	82.50	63.52	65.52	x	18.99	16.99	x
194	238	Washington	USA.	38.8208	-77.2444	-26.01	66.91	67.91	x	-92.92	-93.92	x
195	239	Noumea	France	-22.2283	166.4850	160.38	143.45	147.45	x	16.93	12.93	x
196	240	Yerevan	Armenia	40.2264	44.5031	1194.75	1192.50	1188.50	x	2.26	6.26	x
197	241	Singapore	Singapore	1.3458	103.6800	79.00	51.09	51.09	54.00	27.91	27.91	25.00
198	242	Kigali	Ruanda	-1.9447	30.9000	1485.30	1394.25	1427.95	1377.00	91.05	57.35	108.30
199	243	Novosibirsk	Russia	54.8406	83.2356	123.64	124.01	127.01	115.00	-0.36	-3.36	8.64
200	248	Onsala	Sweden	57.3953	11.9256	45.50	41.54	43.54	42.00	3.96	1.96	3.50
201	249	Paris	France	48.8358	2.3350	124.20	109.54	109.54	x	14.66	14.66	x
202	250	Ohrid	Macedonia	41.1272	20.7942	773.00	757.49	759.49	x	15.51	13.51	x
203	251	Osijek	Croatia	45.5608	18.6806	153.90	134.76	133.76	135.00	19.15	20.15	18.90
204	252	Osan	South Korea	37.0775	127.2416	48.90	74.81	74.81	73.00	-25.91	-25.91	-24.10
205	254	Dunedin	New Zealand	-45.8694	170.5108	26.10	13.13	15.13	16.00	12.97	10.97	10.10
206	255	Padova	Italy	45.4111	11.8961	64.70	55.60	56.60	59.00	9.10	8.10	5.70
207	257	Punta Arenas	Chile	-53.1369	-70.8800	22.00	18.74	18.74	21.00	3.26	3.26	1.00
208	258	Parques	Australia	-32.9989	148.2647	397.40	395.67	397.67	391.00	1.73	-0.27	6.40
209	260	Port Blair	India	11.6378	92.7122	-22.55	-26.67	-26.67	x	4.12	4.12	x
210	261	Ponta Delgada	Portugal	37.7478	-25.6627	110.80	97.97	101.97	x	12.83	8.83	x
211	262	Penc	Hungary	47.7897	19.2814	291.70	286.65	285.65	291.00	5.05	6.05	0.70
212	263	Perth	Australia	-31.8019	115.8852	12.92	14.47	12.47	10.00	-1.55	0.45	2.92
213	264	Petropavlovsk	Russia	53.0667	158.6069	211.03	191.53	190.53	185.00	19.50	20.50	26.03
214	265	Petropavlovsk	Russia	53.0233	158.6500	102.20	87.21	84.21	91.00	14.99	17.99	11.20
215	266	Pickle Lake	Canada	51.4797	-90.1619	315.10	314.13	314.13	x	0.97	0.97	x
216	267	Pie Town	USA	34.3014	-108.1180	2347.71	2349.11	2348.11	x	-1.40	-0.40	x
217	269	Pinyon Flat	USA	33.6100	-116.4600	1256.17	1238.44	1238.44	1241.00	17.74	17.74	15.17
218	270	Bishkek	Kyrgyzstan	42.6797	74.6942	1714.20	1707.33	1707.33	x	6.87	6.87	x
219	271	Poltava	Ukraine	49.6025	34.5428	178.10	168.27	166.27	x	9.83	11.83	x
220	272	Potsdam	Germany	52.3792	13.6611	174.00	70.66	70.66	x	103.34	103.34	x
221	273	Porto Velho	Brasil	-8.7094	-63.8963	119.60	96.40	96.40	x	23.20	23.20	x
222	274	Calgary	Canada	50.8714	-114.2930	1247.90	1243.30	1243.30	x	4.61	4.61	x

Supplementary data

Station		IGS	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90	SRTM C-30	SRTM X-30	C-90	C-30	X-30
Sl. No.	No.	Station					Height [m]	Height [m]	Height [m]	Error [m]	Error [m]	Error [m]
223	275	Pretoria	South Africa	-25.7464	28.2242	1416.40	1401.61	1370.25	1402.00	14.79	46.15	14.40
224	277	Taguig City	Philippines	14.5356	121.4083	86.63	246.87	241.87	237.00	-160.24	-155.24	-150.37
225	278	Braunschweig	Germany	52.2961	10.4597	130.20	125.14	123.14	125.00	5.06	7.06	5.20
226	281	Quito	Ecuador	-0.2153	-78.4936	2922.60	2894.71	2901.71	2899.00	27.89	20.89	23.60
227	284	Rabat	Morocco	33.9981	-6.8542	90.10	77.36	31.17	x	12.74	58.93	x
228	285	Mitipe Ramon	Israel	30.5978	34.7631	893.10	880.87	883.87	882.00	12.24	9.24	11.10
229	287	Nairobi	Kenya	-1.2211	36.8939	1607.54	1593.11	1645.74	x	14.43	-38.19	x
230	288	Recife	Brazil	-8.0508	-34.9513	20.20	11.58	12.58	x	8.63	7.63	x
231	290	Le Tampon	France	-21.2083	55.5717	1558.40	1558.99	1558.99	x	-0.59	-0.59	x
232	292	Riga	Latvia	56.9486	24.5861	34.70	60.59	61.59	68.00	-25.89	-26.89	-33.30
233	293	Rio Grande	Argentina	-53.7856	-67.7511	32.00	32.50	30.50	33.00	-0.50	1.50	-1.00
234	294	Riobamba	Ecuador	-1.6506	-78.6511	2793.00	2816.29	2816.29	x	-23.29	-23.29	x
235	295	San Fernando	Spain	36.4642	-6.2064	73.70	68.62	71.62	x	5.08	2.08	x
236	296	Simi Valley	USA	34.2356	-118.6760	553.39	549.92	550.92	549.00	3.47	2.47	4.39
237	298	São Luis	Brazil	-2.5933	-44.2125	18.90	17.53	17.53	x	1.37	1.37	x
238	299	Santiago	Chile	-33.1503	-70.6686	723.07	729.45	728.45	x	-6.37	-5.37	x
239	300	Saskatoon	Canada	52.1964	-106.3980	580.00	569.18	571.18	x	10.83	8.83	x
240	301	Reugen	Germany	54.5136	13.6433	68.20	38.48	39.48	41.00	29.72	28.72	27.20
241	302	Salvador	Brazil	-12.9392	-38.4322	76.30	61.09	63.09	x	15.21	13.21	x
242	303	Springbok	South Africa	-29.6694	17.8792	1043.10	1035.59	1025.26	1034.00	7.51	17.84	9.10
243	304	Schefferville	Canada	54.8322	-66.8325	498.20	494.81	495.81	493.00	3.39	2.39	5.20
244	305	San Clemente Island	USA	32.9100	-118.4900	452.86	439.35	439.35	x	13.51	13.51	x
245	307	Santiago De Cuba	Cuba	20.0119	-75.7622	21.90	17.68	13.68	x	4.22	8.22	x
246	308	Almaty	Kazakhstan	43.1792	77.1667	1340.00	1975.19	1976.19	1991.00	-635.19	-635.19	-651.00
247	309	La Misere	Seychelles	-4.6736	55.4794	537.91	530.78	612.59	x	7.13	-74.68	x
248	310	Piru	USA	34.4597	-118.7540	291.52	287.42	282.42	x	4.10	9.10	x
249	311	San Fernando	Spain	36.4642	-6.2056	85.80	73.62	73.62	x	12.18	12.18	x
250	312	Sheshan	China	31.0997	121.2005	22.09	15.15	17.15	20.00	6.94	4.94	2.09
251	313	Shediac	Canada	46.2206	-64.5519	-15.30	-19.89	-18.89	-18.00	4.59	3.59	2.70
252	314	Simonstown	South Africa	-34.1881	18.4394	39.49	x	24.13	36.00	x	15.36	3.49
253	315	La Jolla	USA	32.8600	-117.2500	34.88	21.93	21.93	30.00	12.96	12.96	4.88
254	316	San Lorenzo	Honduras	13.4239	-87.4363	12.00	7.58	7.58	5.00	4.42	4.42	7.00
255	317	Nachi Katsuura-Cho	Japan	33.5778	135.9369	97.54	90.66	95.66	x	6.87	1.87	x
256	318	San Nicolas Island	USA	33.2478	-119.5240	239.67	241.47	240.47	235.00	-1.80	-0.80	4.67
257	319	Sofia	Bulgaria	42.5561	23.3947	1119.60	1112.33	1114.33	x	7.28	5.27	x
258	320	Solar Village	Saudi Arabia	24.9106	46.4006	760.14	757.62	759.62	757.00	2.52	0.52	3.14
259	321	Saddle Peak	USA	34.0594	-118.6460	440.13	429.85	436.85	438.00	10.28	3.28	2.13

Supplementary data

Supplementary data: (Continued.)

Sl. No.	Station No.	IGS Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90 Height [m]	SRTM C-30 Height [m]	SRTM X-30 Height [m]	C-90 Error [m]	C-30 Error [m]	X-30 Error [m]
260	322	Boras	Sweden	57.7150	12.8914	219.90	219.04	221.04	219.00	0.87	-1.13	0.90
261	323	San Salvador	El Salvador	13.6972	-89.1161	664.40	621.24	621.24	621.00	43.16	43.16	43.40
262	324	Longwood	United Kingdom	-15.9425	-5.6672	453.29	454.49	453.49	x	-1.20	-0.20	x
263	325	St. John's	Canada	47.5953	-52.6777	152.80	145.83	147.83	x	6.97	4.97	x
264	326	Shintofukawa	Japan	43.5286	141.8447	118.54	110.66	112.66	x	7.88	5.88	x
265	327	Canberra	Australia	-35.3156	149.1000	800.04	603.40	606.40	x	196.64	193.64	x
266	328	Canberra	Australia	-35.5319	149.1694	799.95	878.26	879.26	x	-78.30	-79.30	x
267	329	Lviv	Ukraine	49.8356	24.1444	370.50	288.14	290.14	290.00	82.36	80.36	80.50
268	331	Sutherland	South Africa	-32.3814	20.8108	1797.60	1796.74	1782.48	1795.00	0.87	15.12	2.60
269	332	Sutherland	South Africa	-32.3803	20.8106	1799.77	1799.74	1795.86	1798.00	0.03	3.90	1.77
270	333	Suva	Fiji	-18.1458	178.4252	73.00	62.21	60.21	x	10.80	12.80	x
271	334	Suwon-Shi	Korea	37.2756	127.5416	83.93	78.24	78.24	x	5.70	5.70	x
272	336	Sydney	Australia	-33.7808	151.1502	85.68	87.86	84.86	80.00	-2.18	0.82	5.68
273	338	Wrightwood	USA	34.3819	-117.6780	2228.03	2214.54	2225.54	x	13.49	2.49	x
274	341	Tashkent	Uzbekistan	41.3281	69.2956	439.70	433.63	432.63	x	6.07	7.07	x
275	342	Hsinchu	China	24.7981	120.9875	77.26	64.02	64.02	66.00	13.24	13.24	11.26
276	343	Thohoyandou	South Africa	-23.0800	30.3839	630.20	629.99	641.61	624.00	0.21	-11.41	6.20
277	344	Tehran	Iran	35.6972	51.3342	1194.57	1185.69	1187.69	1191.00	8.89	6.89	3.57
278	345	Palmeira	Cape Verde	16.7547	-22.9827	35.00	35.72	38.62	x	-0.72	-3.62	x
279	346	Papeete	Tahiti	-17.5769	-149.6060	98.04	98.33	95.33	x	-0.29	2.71	x
280	349	Canberra	Australia	-35.3992	148.9800	665.44	664.16	665.16	x	1.28	0.28	x
281	351	Tidbinbilla	Australia	-35.3992	148.9800	665.37	664.16	665.16	x	1.21	0.21	x
282	352	Titz	Germany	51.0353	6.4317	155.60	154.05	154.05	x	1.55	1.55	x
283	354	Toulouse	France	43.5606	1.4808	207.20	197.10	199.10	x	10.10	8.10	x
284	355	Hsinchu	China	24.7981	120.9872	75.86	64.02	65.02	71.00	11.84	10.84	4.86
285	356	Torrance	USA	33.7978	-118.3300	-5.22	-4.35	-3.35	x	-0.88	-1.88	x
286	358	Trabzon	Turkey	40.9947	39.7756	99.20	86.51	91.51	95.00	12.69	7.69	4.20
287	359	Irvine	USA	33.6200	-117.8000	115.70	116.57	116.57	x	-0.87	-0.87	x
288	363	Gebze	Turkey	40.7867	29.4508	221.80	221.60	219.60	x	0.20	2.20	x
289	365	Taoyuan	China	24.9536	121.1644	203.12	173.06	178.06	180.00	30.06	25.06	23.12
290	366	Los Angeles	USA	34.0692	-118.4410	111.54	104.58	103.58	105.00	6.96	7.96	6.54
291	367	Uchelet	Canada	48.9256	-125.5410	10.00	14.90	10.90	11.00	-4.90	-0.90	-1.00
292	368	Curitiba	Brasil	-25.4483	-49.2308	925.80	926.67	926.67	x	-0.87	-0.87	x
293	369	Ulaanbataar	Mongolia	47.6700	107.5000	1611.70	1559.82	1559.82	1549.00	51.88	51.88	62.70
294	370	Uhundi	South Africa	-28.2931	31.4208	607.90	593.12	536.51	x	14.78	71.39	x
295	371	Umtata	South Africa	-31.5489	28.6725	772.50	775.29	766.23	x	-2.79	6.27	x
296	372	Fredericton	Canada	45.9503	-66.6416	22.75	3.90	1.90	9.00	18.85	20.85	13.75

Supplementary data

Supplementary data: (Continued.)

Sl. No.	Station No.	Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90		SRTM X-30		C-90		C-30		X-30	
							Height [m]	Error [m]	Height [m]	Error [m]	Error [m]	Error [m]	Error [m]	Error [m]		
297	373	Ferrara	Italy	44.8331	11.5994	81.01	53.45	54.45	x	27.56	26.56	x				
298	374	Salta	Argentina	-24.7275	-65.4077	1257.80	1261.52	1262.52	x	-3.72	-4.72	x				
299	375	Urumqi	China	43.5900	87.6300	856.10	1091.20	1090.20	x	-235.10	-234.10	x				
300	377	Washington	USA	38.9189	-77.6611	48.90	223.63	223.63	232.00	-174.73	-174.73	-183.10				
301	378	Usuda	Japan	36.1331	138.3619	1508.62	1507.62	1504.62	x	1.00	4.00	x				
302	379	Uzghorod	Ukraine	48.6319	22.2975	232.00	219.11	221.11	x	12.89	10.89	x				
303	380	Vacoas	Mauritius	-20.2972	57.4969	420.40	424.66	423.66	x	-4.26	-3.26	x				
304	381	Vald'or	Canada	48.0969	-77.5641	312.80	305.71	304.71	311.00	7.09	8.09	1.80				
305	384	Villafranca	Spain	40.4436	-3.9519	647.50	650.07	651.07	x	-2.57	-3.57	x				
306	385	Visby	Sweden	57.6539	18.3672	79.80	75.93	75.93	76.00	3.88	3.88	3.80				
307	386	Vandenberg	USA	34.5564	-120.6160	-11.50	-6.66	-9.66	-10.00	-4.84	-1.84	-1.50				
308	387	Wabern	Switzerland	46.9236	7.4642	611.00	600.76	597.76	x	10.24	13.24	x				
309	388	Rostock	Germany	54.1697	12.1014	50.70	37.14	37.14	40.00	13.56	13.56	10.70				
310	391	Wellington	New Zealand	-41.2728	174.7786	46.90	35.54	35.54	35.00	11.36	11.36	11.90				
311	393	Westford	USA	42.6133	-71.4933	85.00	73.54	71.54	x	11.47	13.47	x				
312	394	Wellington	New Zealand	-41.3233	174.8058	26.06	22.55	22.55	22.00	3.51	3.51	4.06				
313	395	Whittier	USA	33.9800	-118.3110	94.25	8.59	8.59	4.00	85.66	85.66	90.25				
314	397	Sky Valley	USA	33.9347	-116.3910	445.04	447.10	443.10	447.00	-2.06	1.94	-1.96				
315	398	Williams Lake	Canada	52.2369	-122.1670	1096.00	1079.98	1084.98	x	16.02	11.02	x				
316	399	Windhoek	Namibia	-22.5750	17.8944	1734.70	1548.62	1565.36	x	186.08	169.34	x				
317	400	Mt. Wilson	USA	34.2261	-118.5580	1705.26	213.14	213.14	212.00	1492.12	1492.12	1493.26				
318	401	Wroclaw	Poland	51.1131	17.6194	181.00	198.44	198.44	203.00	-17.44	-17.44	-22.00				
319	402	Whistler	Canada	50.1264	-122.9210	909.00	905.50	897.50	902.00	3.50	11.50	7.00				
320	403	Westerbork	Netherlands	52.9147	6.6044	86.00	59.51	61.51	62.00	26.49	24.49	24.00				
321	404	Bad Koetzting	Germany	49.1442	12.8789	666.00	655.86	657.86	660.00	10.14	8.14	6.00				
322	406	Bad Koetzting	Germany	49.1447	12.8786	663.40	657.86	657.86	661.00	5.54	5.54	2.40				
323	408	Wuhan	P.R. China	30.5317	114.3572	25.80	25.57	29.57	x	0.23	-3.77	x				
324	409	Lintong	P.R. China	34.3686	109.2213	464.41	454.89	451.89	451.00	9.52	12.52	13.41				
325	410	Christmas Island	Australia	-10.4500	105.6886	261.58	257.24	256.24	x	4.34	5.34	x				
326	414	Dongara	Australia	-29.0464	115.3472	242.67	239.19	243.19	x	3.48	-0.52	x				
327	415	Dongara	Australia	-29.0467	115.3469	241.38	244.19	244.19	x	-2.81	-2.81	x				
328	416	Yebees	Spain	40.5250	-3.8861	973.00	795.19	796.19	x	177.81	176.81	x				
329	418	Yibal	Oman	22.1864	56.1122	95.10	91.47	92.47	88.00	3.63	2.63	7.10				
330	421	Yuzhno-Sakhalinsk	Russia	47.0297	142.7166	91.29	74.19	76.19	76.00	17.10	15.10	15.29				

Supplementary data

Supplementary data: (Continued.)

Sl. No.	Station No.	IGS Station	Country	Latitude	Longitude	IGS Height [m]	SRTM C-90 Height [m]	SRTM C-30 Height [m]	SRTM X-30 Height [m]	C-90 Error [m]	C-30 Error [m]	X-30 Error [m]
331	422	Lusaka	Zambia	-15.4256	28.3111	1324.91	1305.17	1290.11	x	19.75	34.80	x
332	423	Zelenchukskaya	Russia	43.2883	41.5650	1166.80	2455.59	2451.59	x	-1288.79	-1284.79	x
333	425	Zimmerwald	Switzerland	46.8772	7.4650	954.30	943.84	944.84	x	10.46	9.46	x
334	426	Zimmerwald	Switzerland	46.8772	7.4653	956.70	943.84	944.84	x	12.86	11.86	x
335	427	Zwenigorod	Russia	55.7000	36.7600	272.00	193.35	192.35	198.00	78.65	79.65	74.00