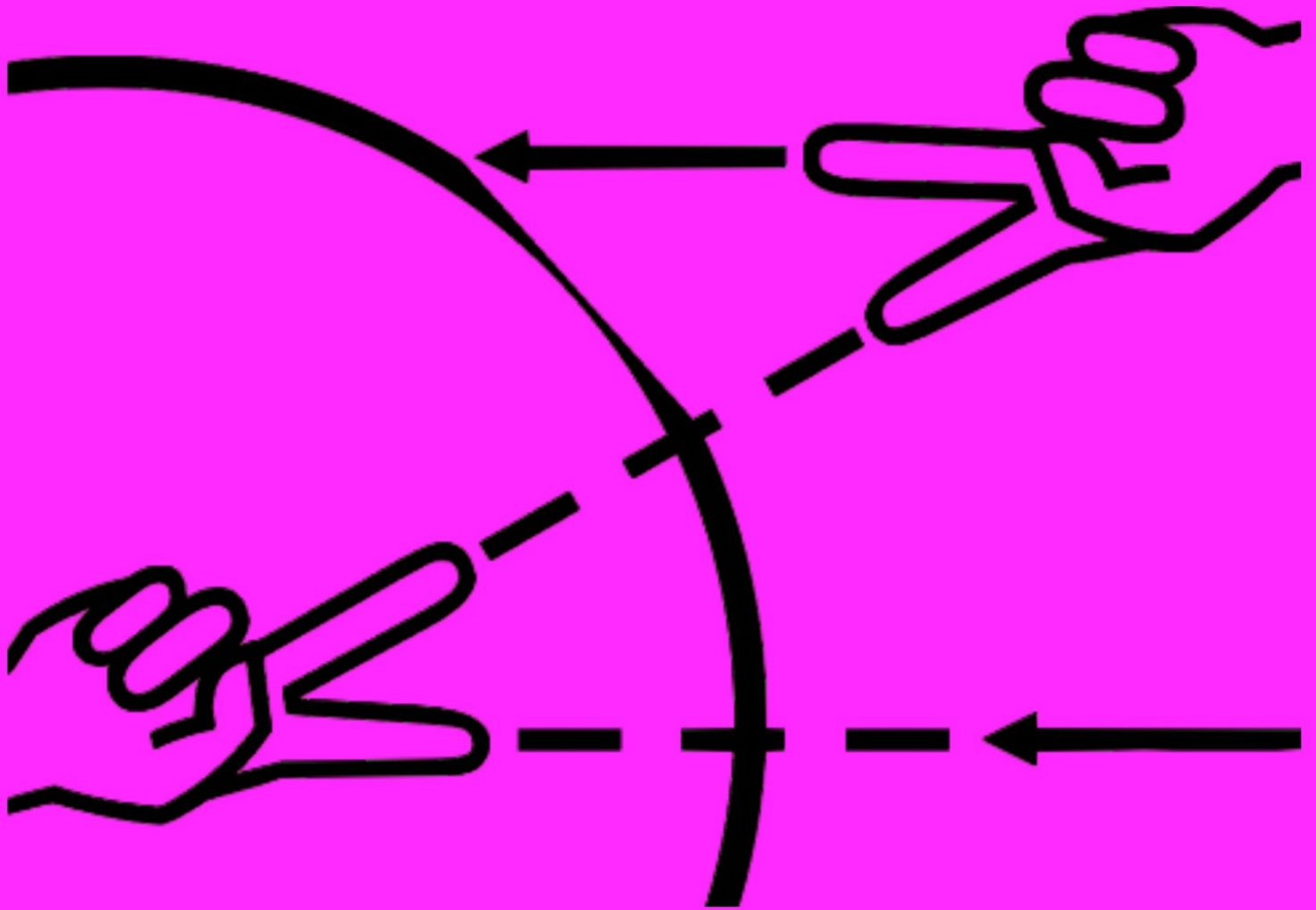


Eratostrhenes



4 Continents

9 Countries

23 Schools

60 Measures

4
Continents

9
Countries

23
Schools

60
Measures

ARGENTINA (1)

Alta Gracia

BRAZIL (4)

Itajubá, Piranguinho, Rio de Janeiro (2)

COLOMBIA (1)

Guarne

CROATIA (1)

Brštanovo

FRANCE (1)

Lafrançaise

GREECE (4)

Aigio, Athens, Petroupoli, Piraeus

INDIA(5)

Dholpur (2), Farukkabad, Kashipur, Kota, Yamunanagar

ROMANIA (4)

Busteni, Dohoroi, Margineni, Pogana

TUNISIA (1)

Bizerte

Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079
	Alta Gracia	Argentina	Fundación Caminos de Anisacate	-31.659	-64.417
	Athens	Greece	Experimental College Agion Anargyron	38.027	23.726
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868
	Brštanovo	Croatia	Osnovna škola kneza Branimira	43.658	16.415
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535
	Dholpur	India	UPS Math Badri	26.773	77.539
	Dholpur Tanda	India	Govt adarsh senior secondary school	26.837	77.878
	Dorohoi	Romania	Grigore Ghica National College	47.953	26.394
	Farukkhabad	India	St. Anthony's senior secondary school	27.391	79.583
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449
	Itajubá	Brazil	Universidade Federal de Itajubá	-22.415	-45.449
	Kashipur	India	Sai Public School	29.207	78.988
	Kota	India	Govt. Law College Kota	25.132	75.808
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237
	Mărgineni	Romania	Gh. Popescu School	44.533	24.554
	Petroupoli	Greece	4o Junior High School	38.036	23.674
	Piraeus	Greece	2nd Junior High School of Korydallos	37.977	23.655
	Piranguinho	Brazil	Universidade Federal de Itajubá	-22.411	-45.535
	Pogana	Romania	Scoala Gimnaziala Nr.1 Pogana	46.313	27.575
	Rio de Janeiro	Brazil	Palácio Tiradentesl	-22.904	-43.174
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317
	Yamunanagar	India	DIE&T Tejli	30.134	77.310

Aigio, Greece

December 2018

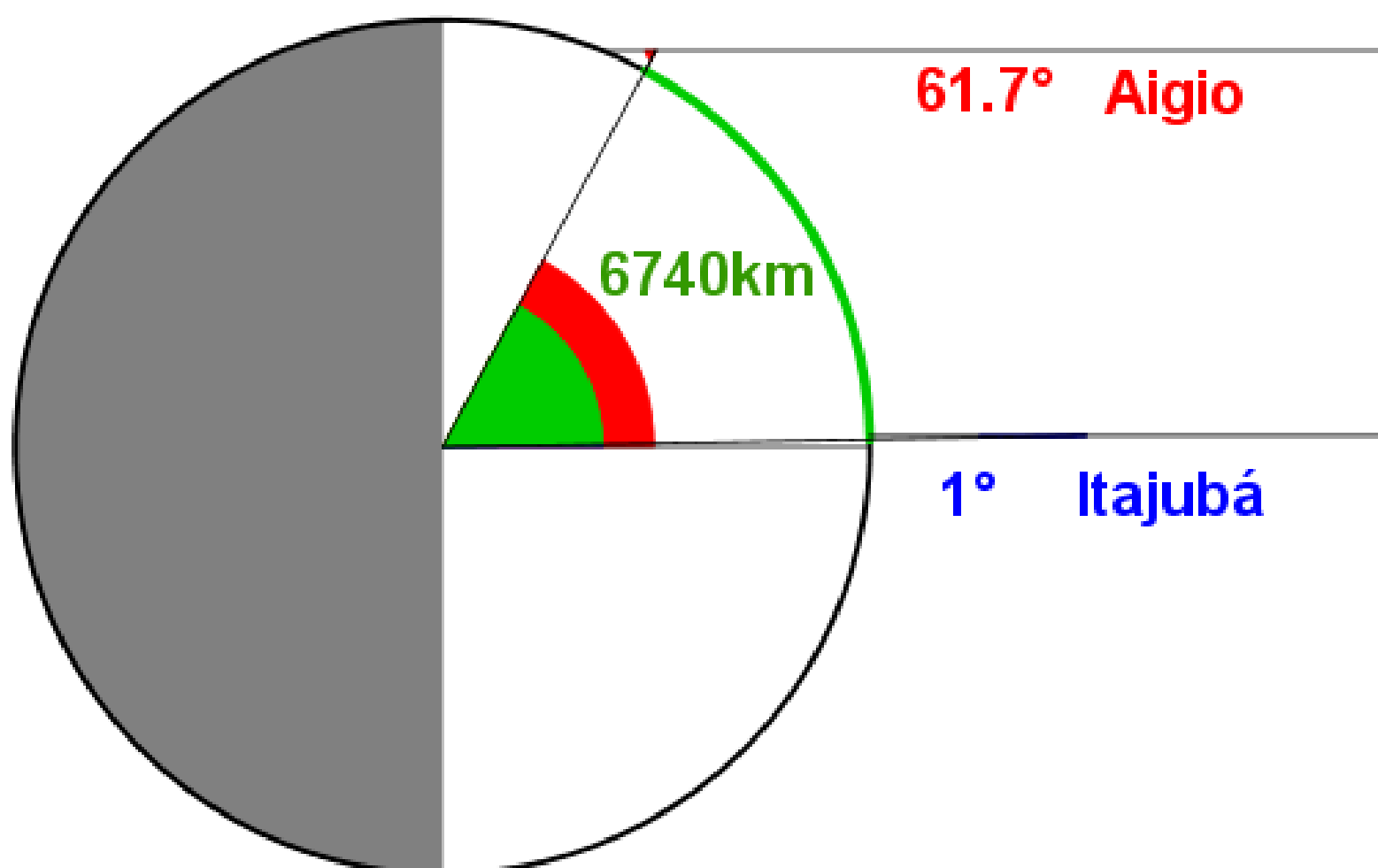


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079

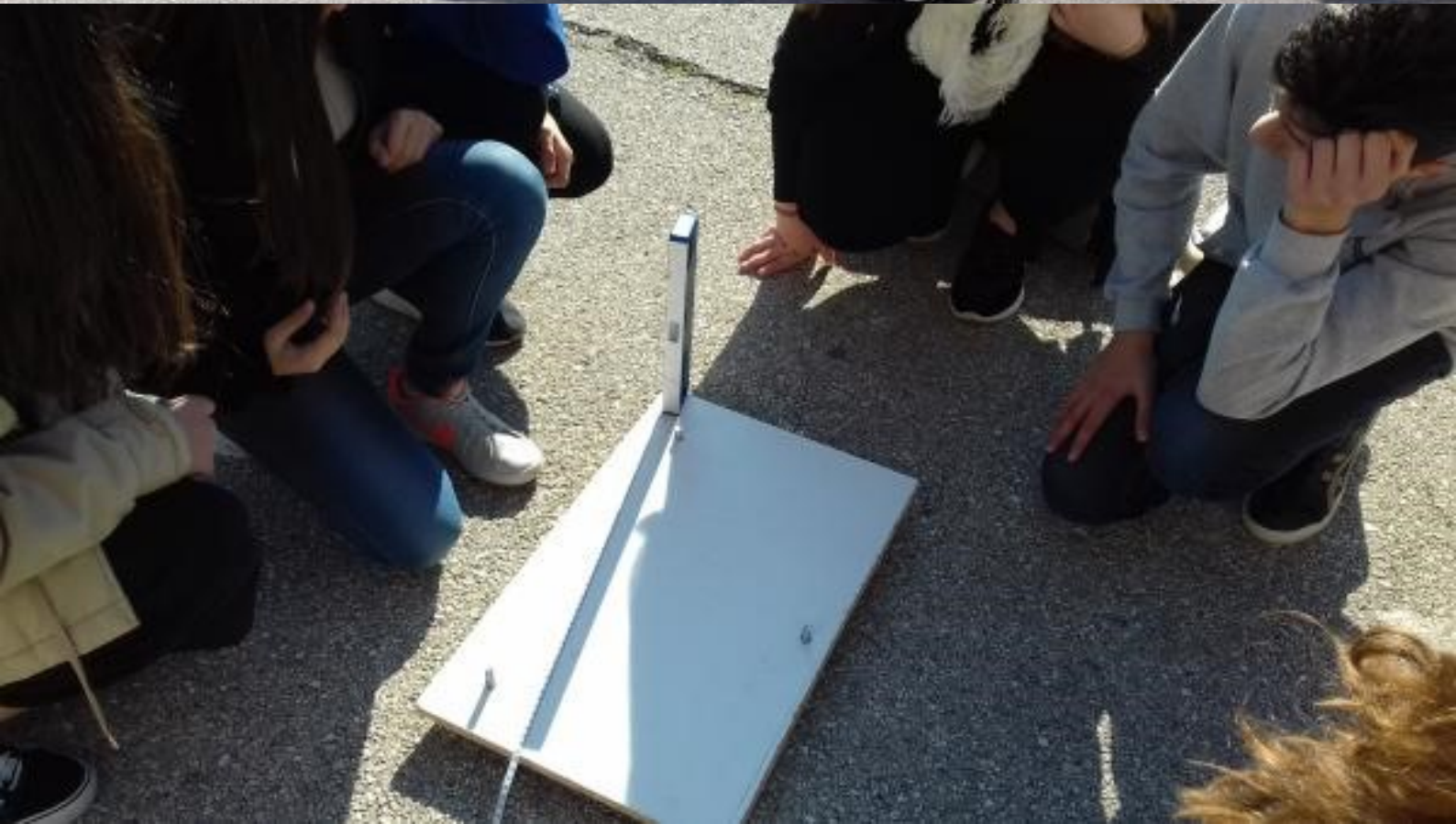
Date	Gnomon	Shadow	Angle
12 December 2018	30.0 cm	54.0 cm	60.9 °
17 December 2018	30.0 cm	55.8 cm	61.7 °
20 December 2018	30.0 cm	55.3 cm	61.5 °

17/12/2018 (Aigio-Greece) Latitude: 38.252°

17/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 6740\text{km}}{61.7^\circ - 1^\circ} = 39974 \text{ km}$$



Alta Gracia, Argentina

December 2018



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Alta Gracia	Argentina	Fundación Caminos de Anisacate	-31.659	-64.417

Date	Gnomon	Shadow	Angle
09 December 2018	38.5 cm	-5.5 cm	-8.1 °





Athens, Greece

December 2018



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Athens	Greece	Experimental College Agion Anargyron	38.027	23.726

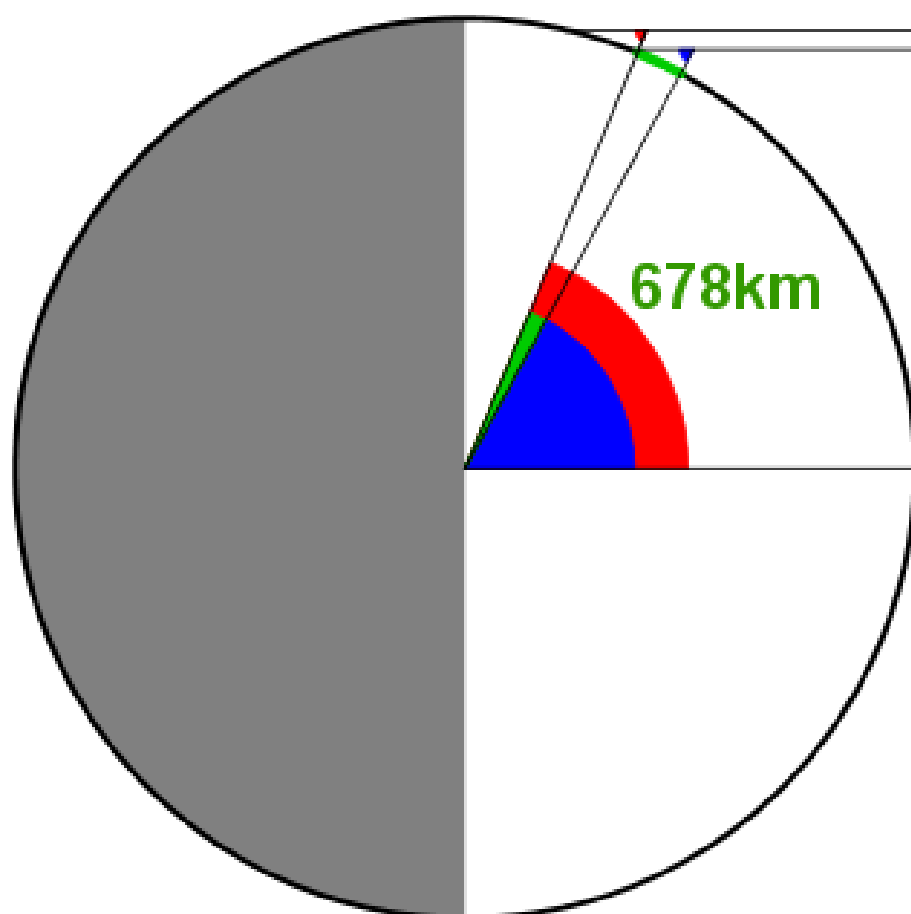
Date	Gnomon	Shadow	Angle
17 December 2018	49.0 cm	90.0 cm	61.4 °
21 December 2018	248.0 cm	439.0 cm	60.5 °

17/12/2018 (Lafrançaise-France) Latitude: 44.127°

17/12/2018 (Athens-Greece) Latitude: 38.027°

67.5° Lafrançaise

61.4° Athens



$$\text{circumference} = \frac{360^\circ \times 678\text{km}}{67.5^\circ - 61.4^\circ} = 40013 \text{ km}$$



Bizerte, Tunisia

December 2018

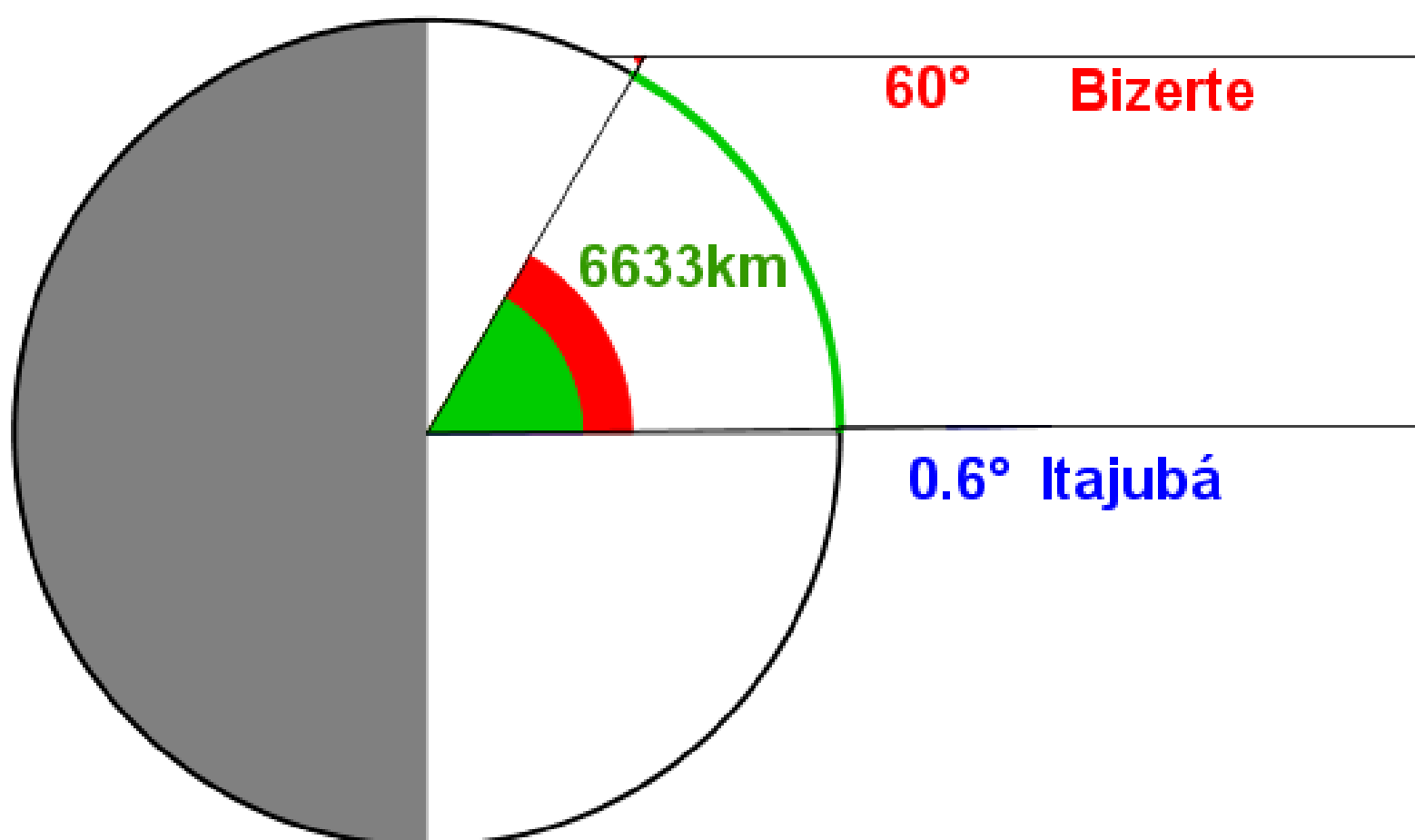


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868

Date	Gnomon	Shadow	Angle
03 December 2018	100 cm	166 cm	58.9 °
04 December 2018	100 cm	166 cm	58.9 °
10 December 2018	17 cm	29 cm	59.6 °
11 December 2018	34.0 cm	59.0 cm	60.0 °

11/12/2018 (Bizerte-Tunisia) Latitude: 37.284°

11/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 6633\text{km}}{60^\circ - 0.6^\circ} = 40200 \text{ km}$$



Brštanovo, Croatia

December 2018

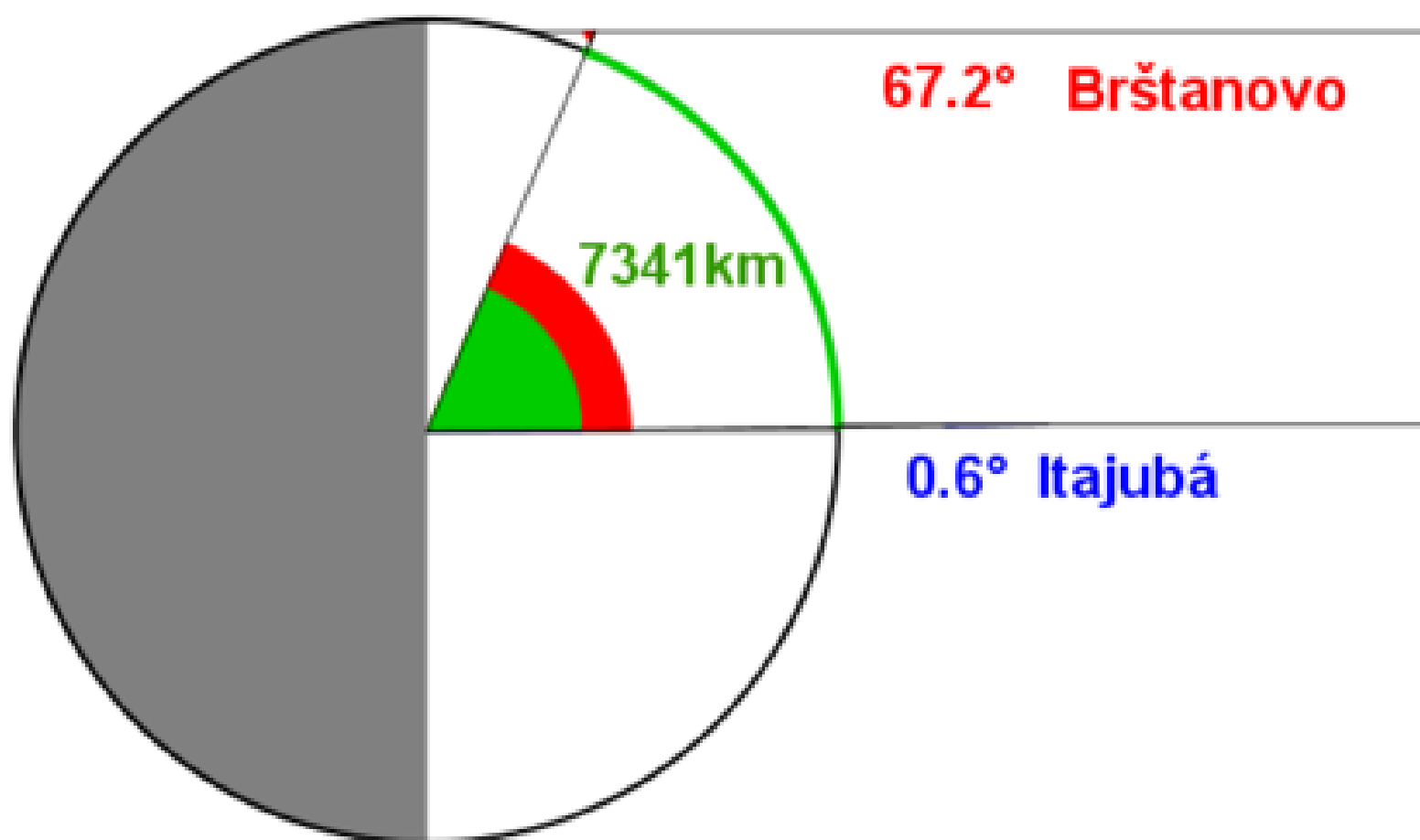


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Brštanovo	Croatia	Osnovna škola kneza Branimira	43.658	16.415

Date	Gnomon	Shadow	Angle
11 December 2018	32 cm	76.1 cm	67.2 °

11/12/2018 (Brštanovo-Croatia) Latitude: 43.658°

11/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 7341\text{km}}{67.2^\circ - 0.6^\circ} = 39681 \text{ km}$$



Busteni, Romania

December 2018



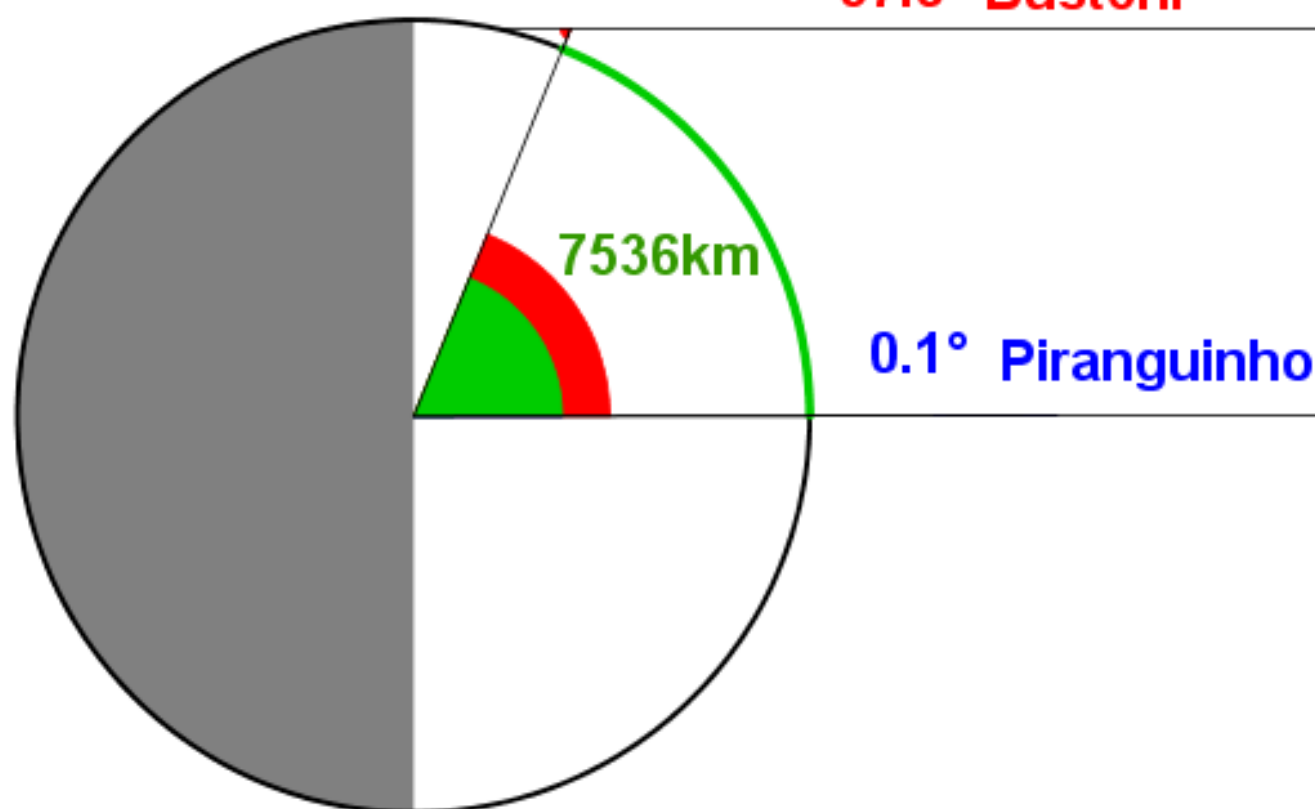
Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535

Date	Gnomon	Shadow	Angle
03 December 2018	50 cm	120.7 cm	67.5 °
04 December 2018	50 cm	121.5 cm	67.6 °
06 December 2018	50 cm	123 cm	67.9 °
07 December 2018	50 cm	123.6 cm	68 °
12 December 2018	50.0 cm	126.5 cm	68.4 °
13 December 2018	50.0 cm	127.0 cm	68.5 °
14 December 2018	50.0 cm	127.5 cm	68.6 °
15 December 2018	6.0 cm	15.3 cm	68.6 °
20 December 2018	50.0 cm	129.0 cm	68.8 °
21 December 2018	21.3 cm	55.0 cm	68.8 °
22 December 2018	20.0 cm	51.7 cm	68.9 °

06/12/2018 (Busteni-Romania) Latitude: 45.416°

06/12/2018 (Piranguinho-Brazil) Latitude: -22.411°

67.9° Busteni



$$\text{circumference} = \frac{360^\circ \times 7536\text{km}}{67.9^\circ - 0.1^\circ} = 40014 \text{ km}$$



Dholpur Math Badri, India

December 2018

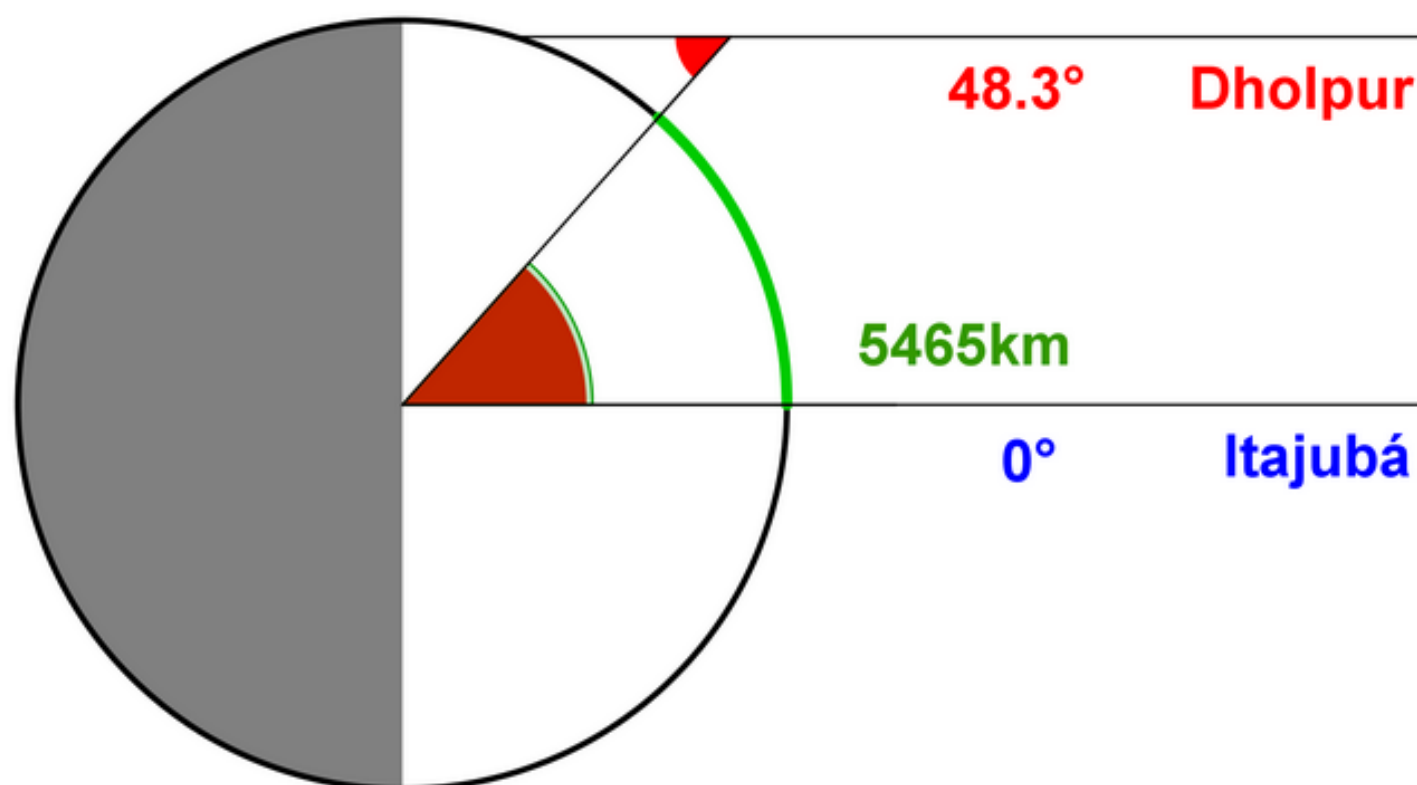


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Dholpur	India	UPS Math Badri	26.773	77.539

Date	Gnomon	Shadow	Angle
05 December 2019	124.0 cm	139.0 cm	48.3 °

05/12/2019 (Dholpur-India) Latitude: 26.773°

05/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 5465\text{km}}{48.3^\circ + 0^\circ} = 40733 \text{ km}$$

Latitude: 26.772756
Longitude: 77.538739
Elevation: 210.16m
Accuracy: 4.7m
Azimuth: 98° (E)
Pitch: -91.1° (-101.1°)
Time: 05-12-2018 12:11
Note: बूथ 56 राज प्राथमिक विद्यालय पुरा पाटीर शंक प्रक्षेपण विधि से पृथ्वी परिधि मापन की प्राचीन विधि प्रयोग Sm 07

राजकाय उच्च माध्यमिक विद्यालय, मठवाढरी



Dholpur Tanda, India

December 2018



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Dholpur Tanda	India	Govt adarsh senior secondary school	26.837	77.878

Date	Gnomon	Shadow	Angle
25 December 2018	58.5 cm	65.2 cm	48.1 °

Government Senior Secondary School, Tanda, Dholpur (Raj)
 Latitude 26.837088 Longitude: 77.577385

~~Date = 25-12~~ DATE = 25-12-2018.

lowest shadow - 65.2 cm
 height of Stand. $\rightarrow$ 58.5 cm

राधाश्याम .9929645325	71 cm	11:50
हरीशल्याणी .7424922463	70.6 cm	11:55
	69.8 cm	12:00
	68.2 cm	12:05
	67.6 cm	12:10
	67.0 cm	12:15
	66.4 cm	12:20
	65.8 cm	12:25
	65.2 cm	12:30
	65.8 cm	12:35
	66.4 cm.	12:40



Latitude: 26.837088
Longitude: 77.877985
Elevation: 174.5m
Accuracy: 3.0m
Azimuth: 310° (NW)
Pitch: -7.5° (1.3°)
Time: 25-12-2018 12:35
Note: Govtadarshssstanda@gmail.com

Powered by AngleCam



Dorohoi, Romania

December 2018

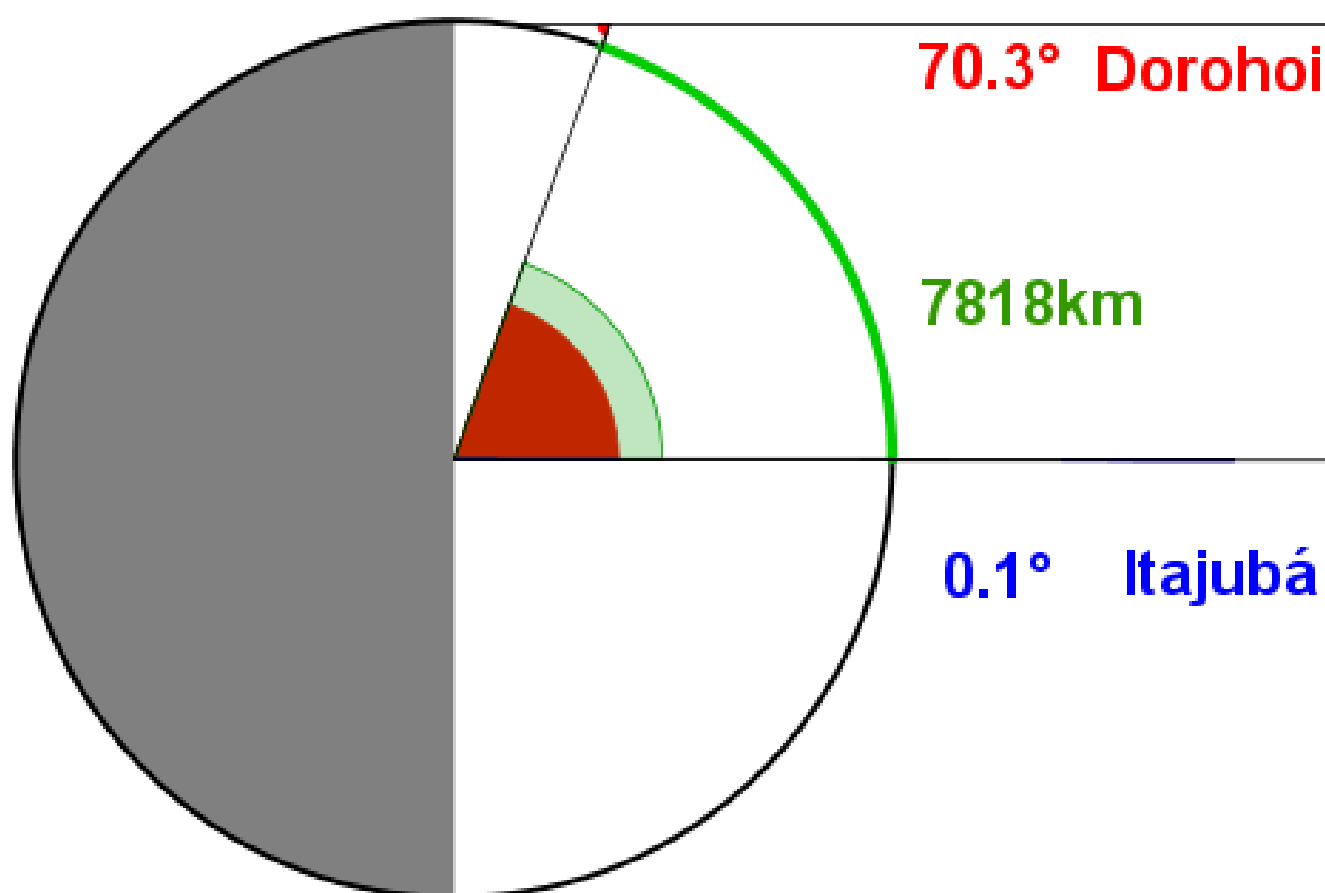


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Dorohoi	Romania	Grigore Ghica National College	47.953	26.394

Date	Gnomon	Shadow	Angle
04 December 2018	100 cm	279 cm	70.3 °
06 December 2018	100.0 cm	281.0 cm	70.4 °
11 December 2018	100 cm	289 cm	70.9 °

04/12/2018 (Dorohoi-Romania) Latitude: 47.953°

04/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 7818\text{km}}{70.3^\circ + 0.1^\circ} = 39978 \text{ km}$$



Farukkhabad, India

December 2018

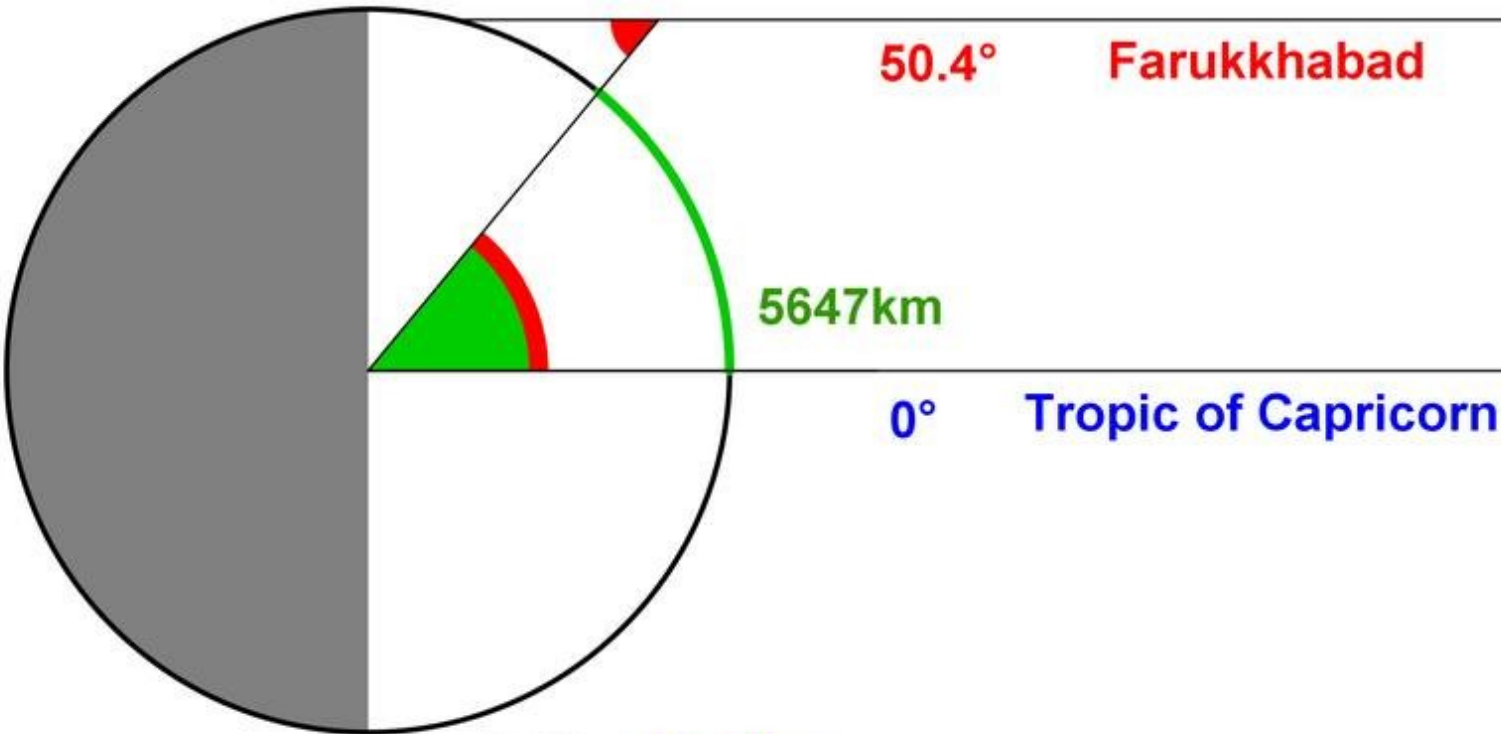


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Farukkhabad	India	St. Anthony's senior secondary school	27.391	79.583

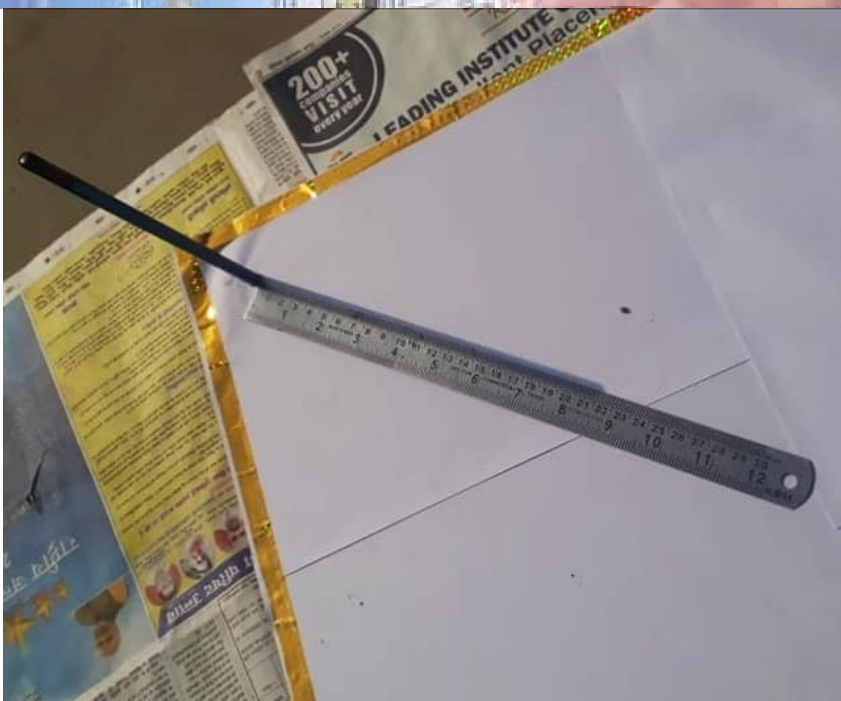
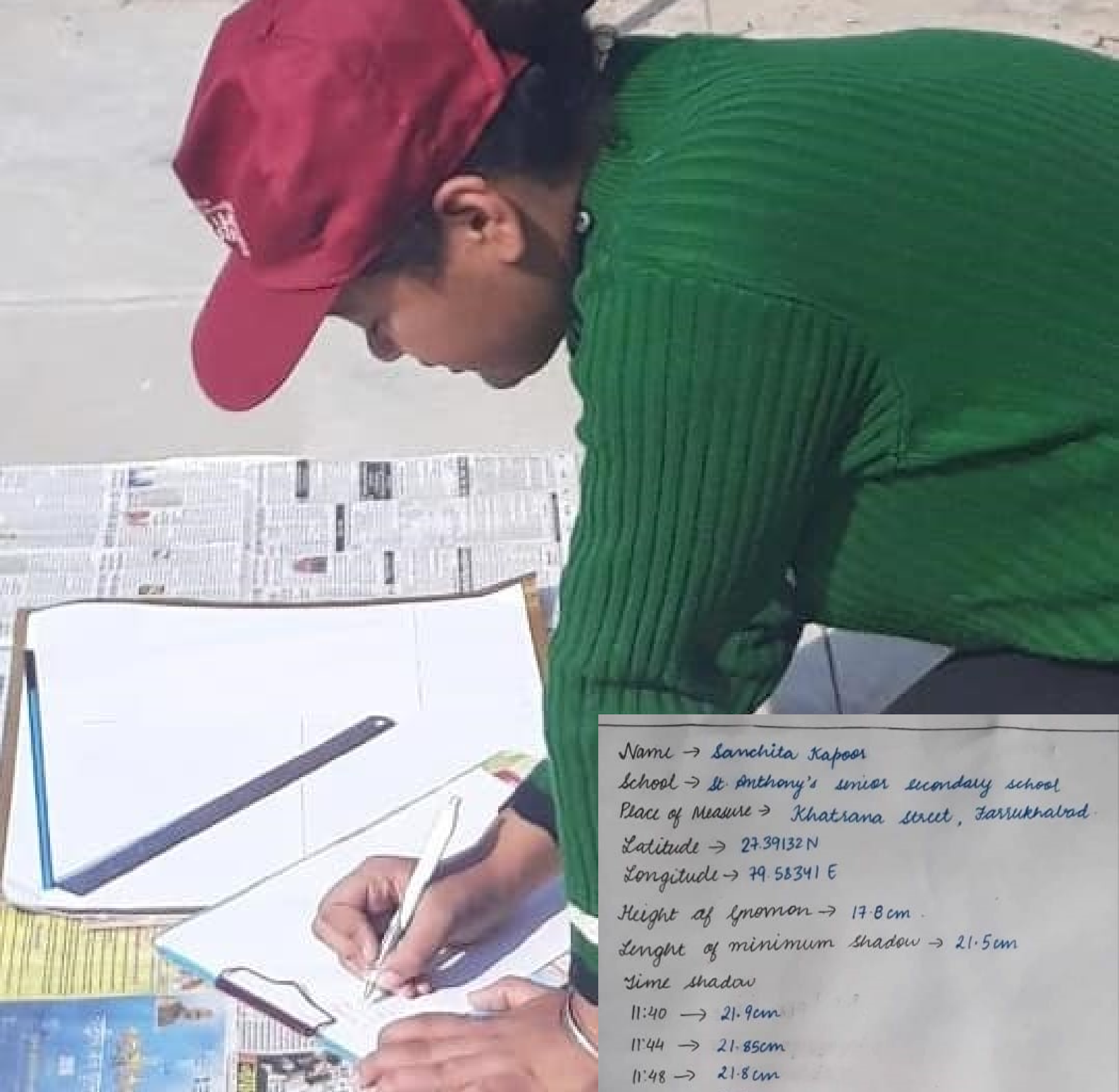
Date	Gnomon	Shadow	Angle
23 December 2018	17.8 cm	21.5 cm	50.4 °

23/12/2018 (Farukkhabad-India) Latitude: 27.391°

23/12/2018 (Tropic of Capricorn) Latitude: -23.437°



circumference = $\frac{360^\circ \times 5647\text{km}}{50.4^\circ - 0^\circ} = 40336 \text{ km}$



Name → Sanchita Kapoor
School → St Anthony's senior secondary school
Place of Measure → Khatrana street, Farrukhabad
Latitude → 27.39132 N
Longitude → 79.58341 E
Height of gnomon → 17.8 cm
Length of minimum shadow → 21.5 cm
Time shadow
11:40 → 21.9 cm
11:44 → 21.85 cm
11:48 → 21.8 cm
11:52 → 21.7 cm
11:56 → 21.65 cm
12:00 → 21.6 cm
12:04 → 21.55 cm
12:08 → 21.5 cm
12:12 → 21.55 cm
12:16 → 21.6 cm
12:20 → 21.7 cm
12:24 → 21.75 cm
12:28 → 21.8 cm
Solar Noon → 12:08 p.m.
Signature → Sanchita
Guide Teacher → Mr. Darshan Lal Banerja

Guarne, Colombia

December 2018

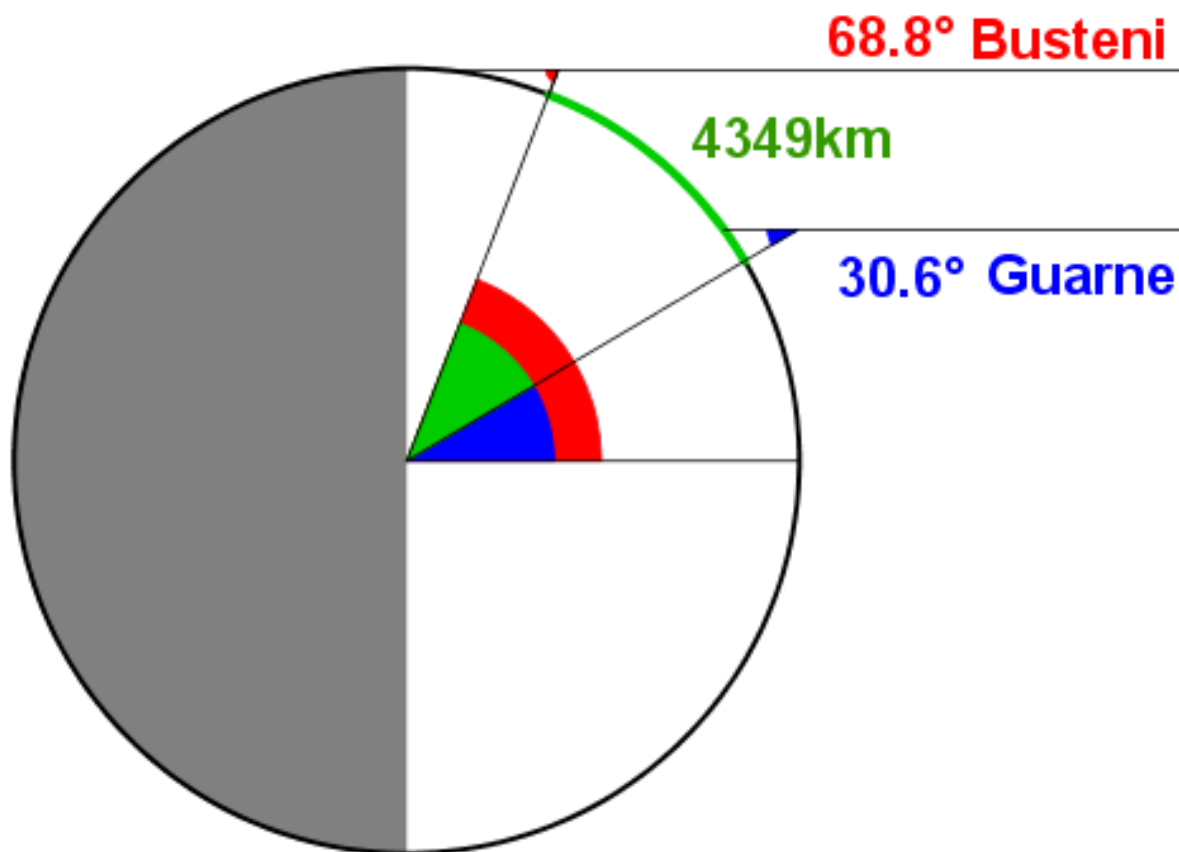


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449

Date	Gnomon	Shadow	Angle
06 December 2018	23.1 cm	12.1 cm	27.6 °
20 December 2018	119.0 cm	70.5 cm	30.6 °

20/12/2018 (Busteni-Romania) Latitude: 45.418°

20/12/2018 (Guarne-Colombia) Latitude: 6.274°



$$\text{circumference} = \frac{360^\circ \times 4349\text{km}}{68.8^\circ - 30.6^\circ} = 40985 \text{ km}$$



Itajubá, Brazil

December 2018

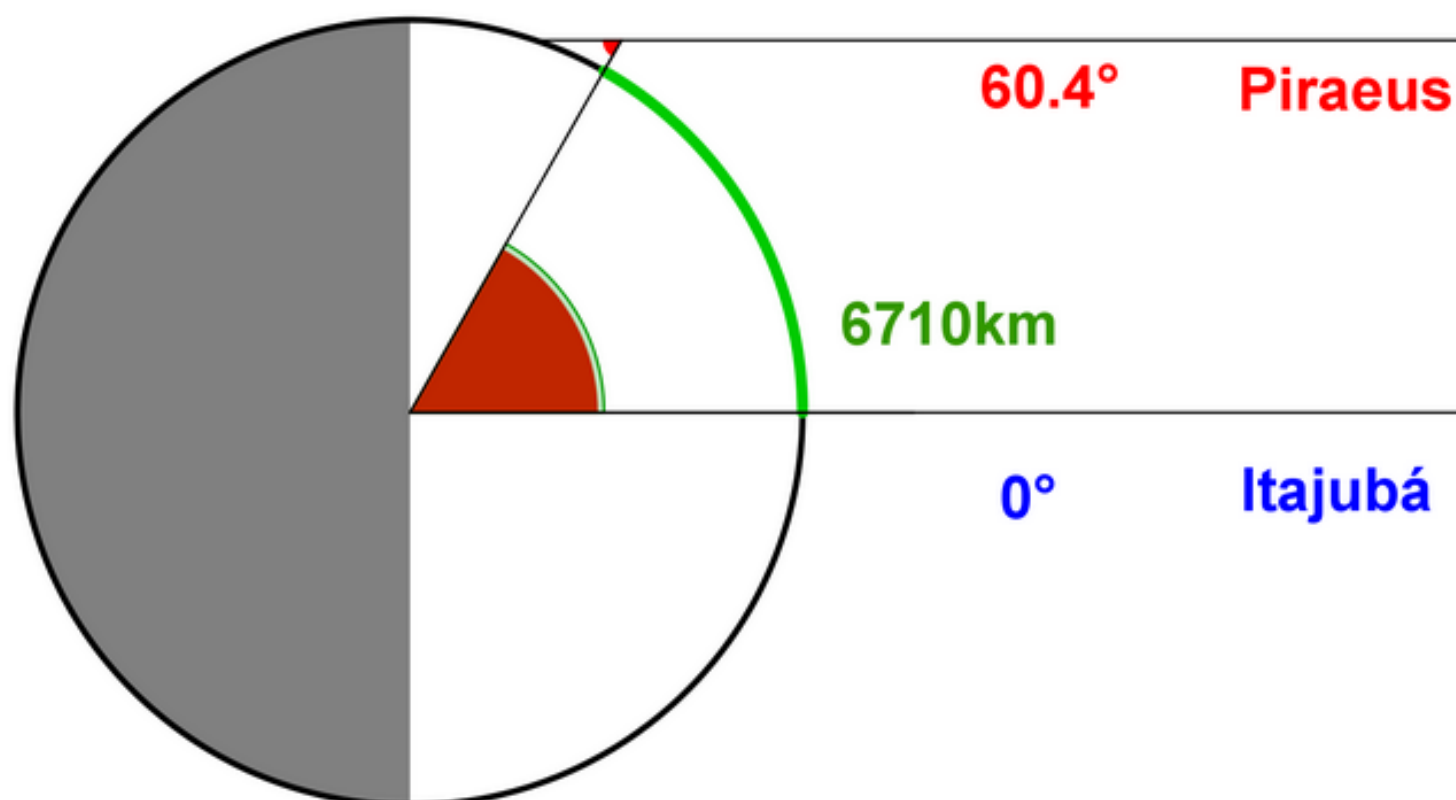


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Itajubá	Brazil	Universidade Federal de Itajubá	-22.415	-45.449

Date	Gnomon	Shadow	Angle
04 December 2018	100 cm	-0.1 cm	-0.1 °
05 December 2018	100.0 cm	0.0 cm	0.0 °
11 December 2018	47.3 cm	0.5 cm	0.6 °
13 December 2018	47.3 cm	0.7 cm	0.8 °
17 December 2018	47.3 cm	0.8 cm	1.0 °

05/12/2018 (Piraeus-Greece) Latitude: 37.977°

05/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 6710\text{km}}{60.4^\circ + 0^\circ} = 39993 \text{ km}$$



Kashipur, India

December 2018

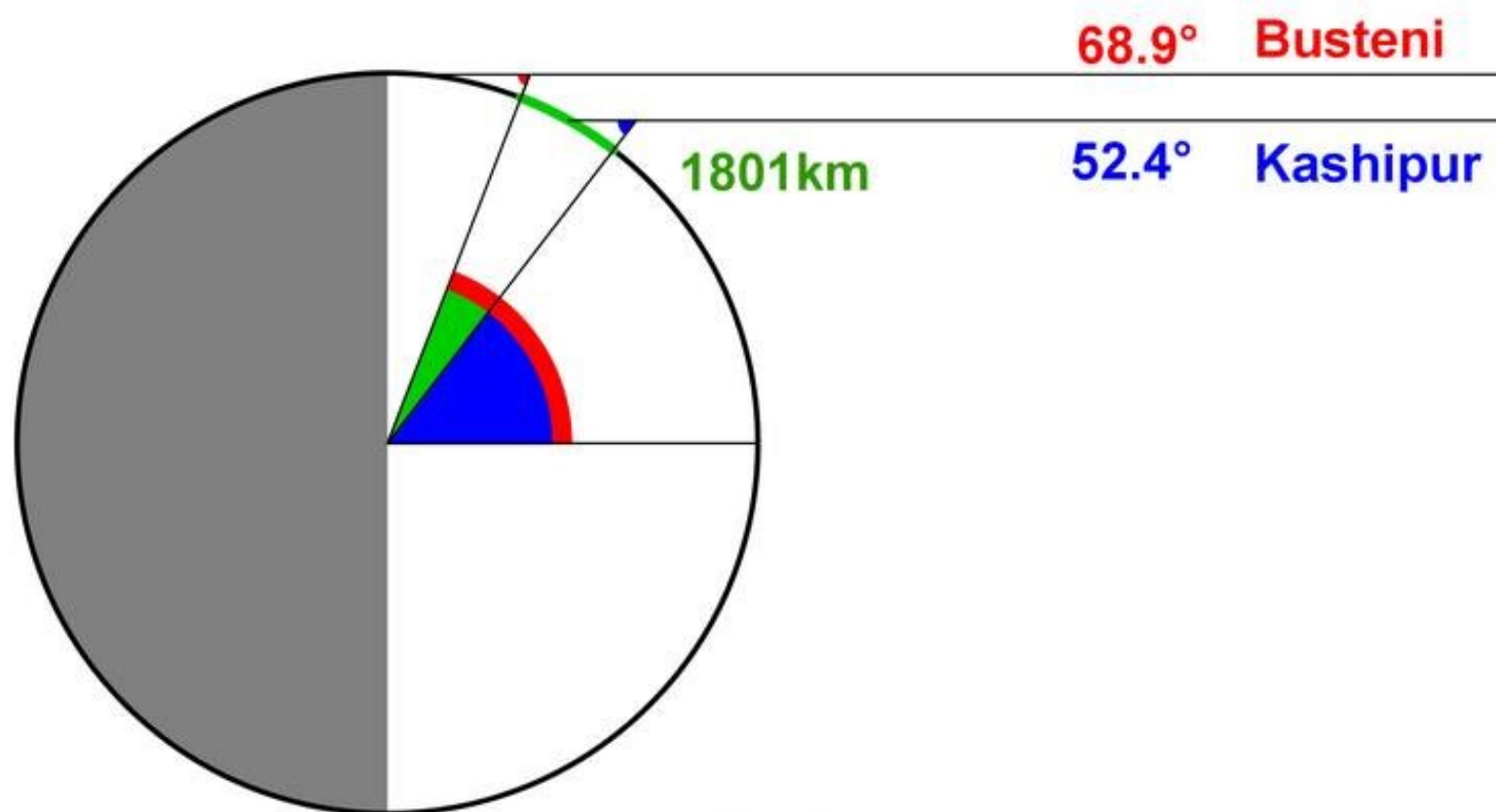


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Kashipur	India	Sai Public School	29.207	78.988

Date	Gnomon	Shadow	Angle
22 December 2018	28.0 cm	36.4 cm	52.4 °

22/12/2018 (Busteni-Romania) Latitude: 45.416°

22/12/2018 (Kashipur-India) Latitude: 29.207°



$$\text{circumference} = \frac{360^\circ \times 1801\text{km}}{68.9^\circ - 52.4^\circ} = 39295 \text{ km}$$



Kota, India

December 2018

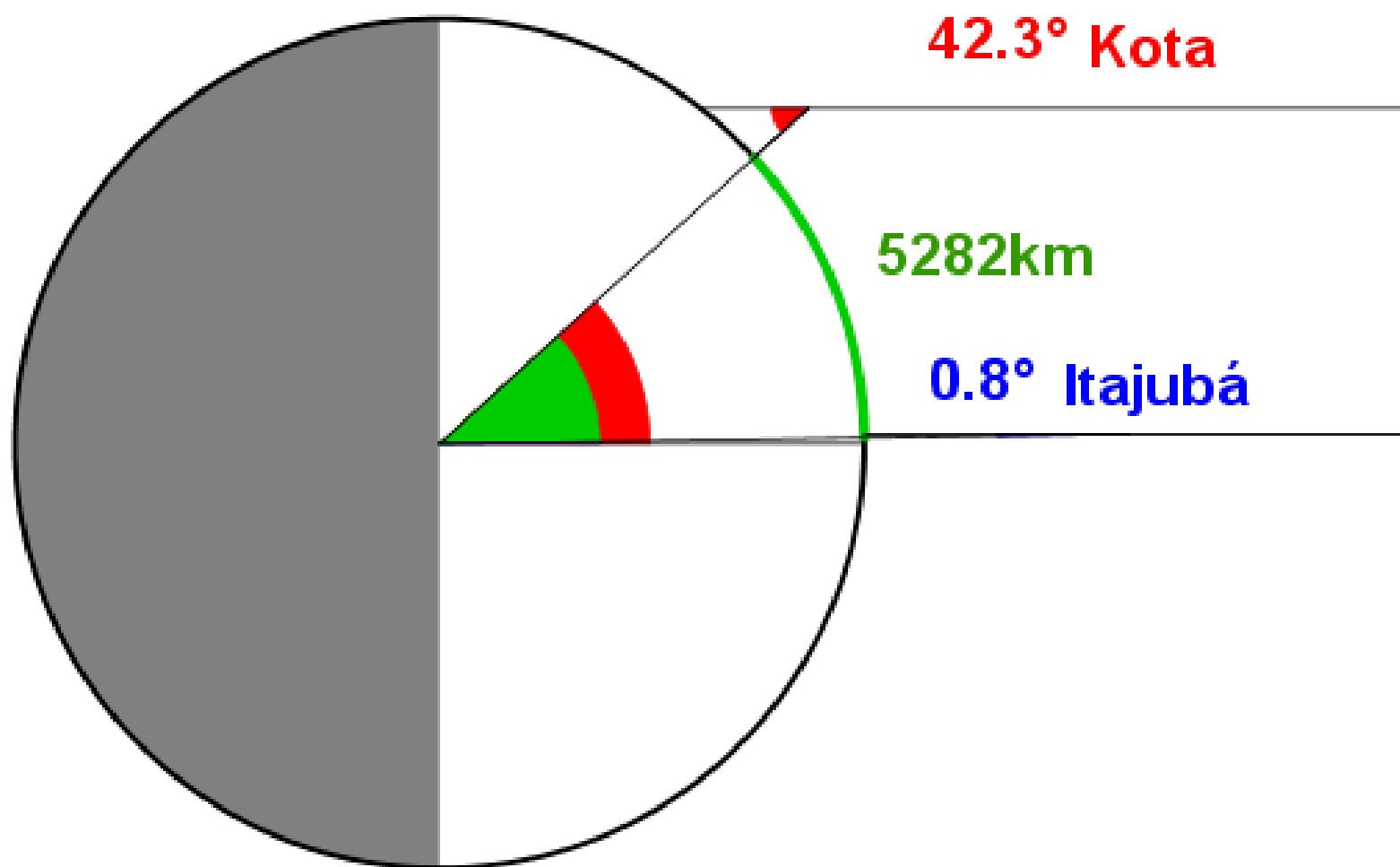


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Kota	India	Govt. Law College Kota	25.132	75.808

Date	Gnomon	Shadow	Angle
13 December 2018	55.0 cm	50.0 cm	42.3 °

13/12/2018 (Kota-India) Latitude: 25.132°

13/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 5282\text{km}}{42.3^\circ - 0.8^\circ} = 45820 \text{ km}$$



Lafrançaise, France

December 2018



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237

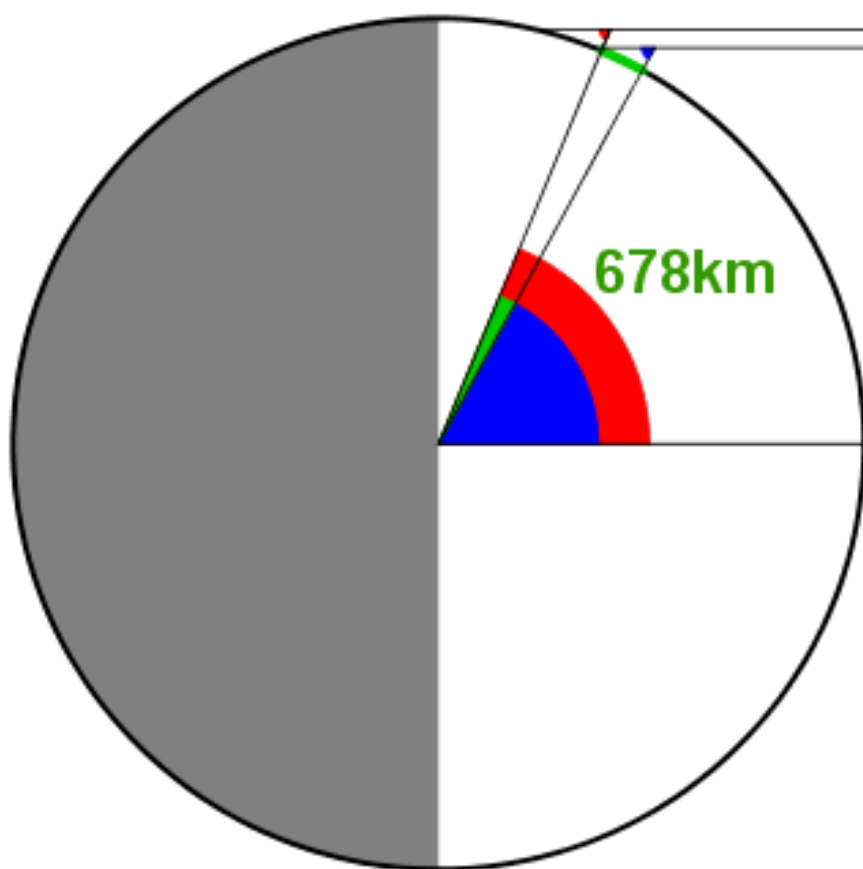
Date	Gnomon	Shadow	Angle
06 December 2018	100 cm	245 cm	67.8 °
07 December 2018	100.0 cm	240.0 cm	67.4 °
10 December 2018	100 cm	237 cm	67.1 °
14 December 2018	100.0 cm	240.0 cm	67.4 °
17 December 2018	100.0 cm	241.0 cm	67.5 °
21 December 2018	100.0 cm	243.0 cm	67.6 °

17/12/2018 (Lafrançaise-France) Latitude: 44.127°

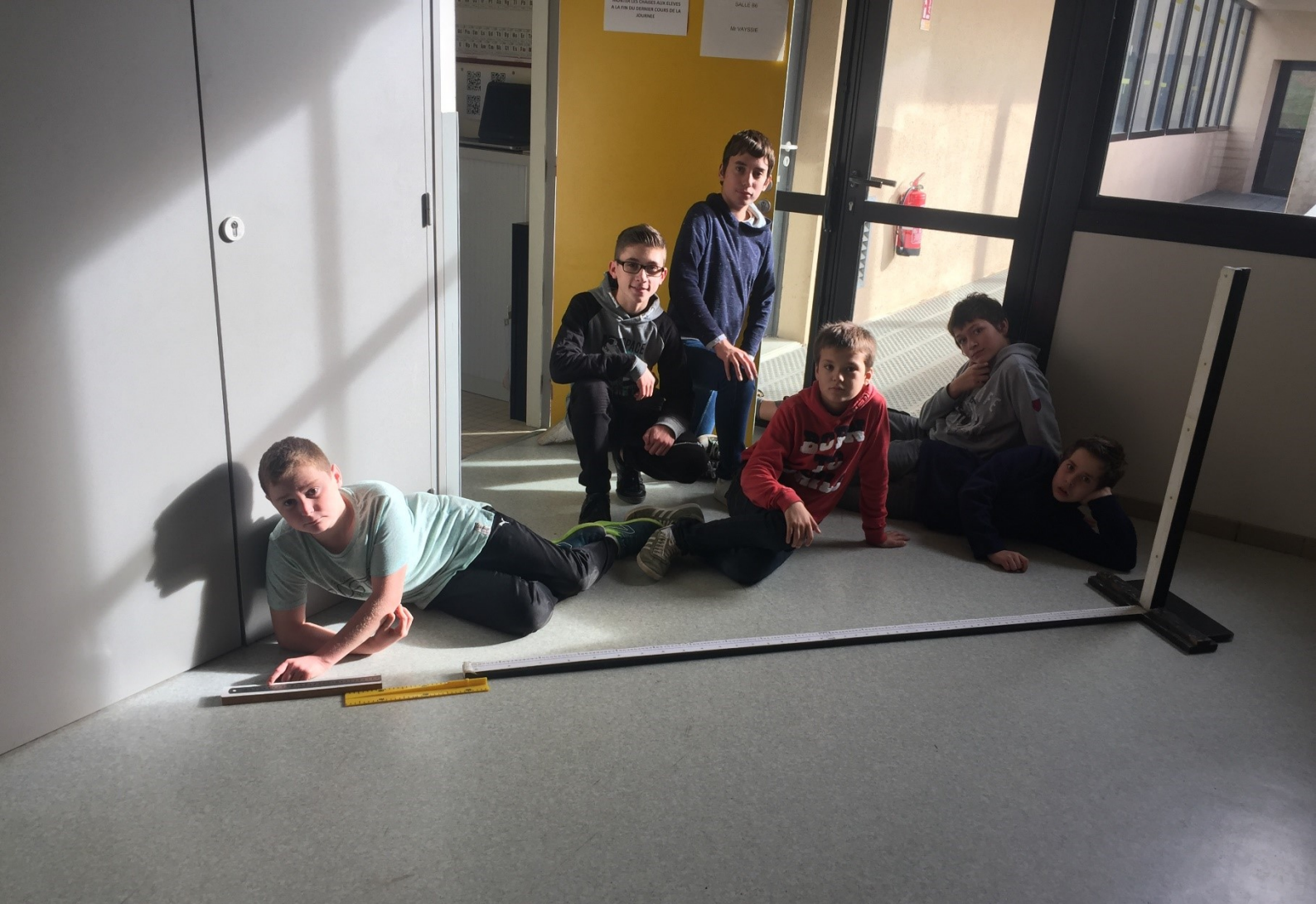
17/12/2018 (Athens-Greece) Latitude: 38.027°

67.5° Lafrançaise

61.4° Athens



$$\text{circumference} = \frac{360^\circ \times 678\text{km}}{67.5^\circ - 61.4^\circ} = 40013 \text{ km}$$



Margineni, Romania

December 2018

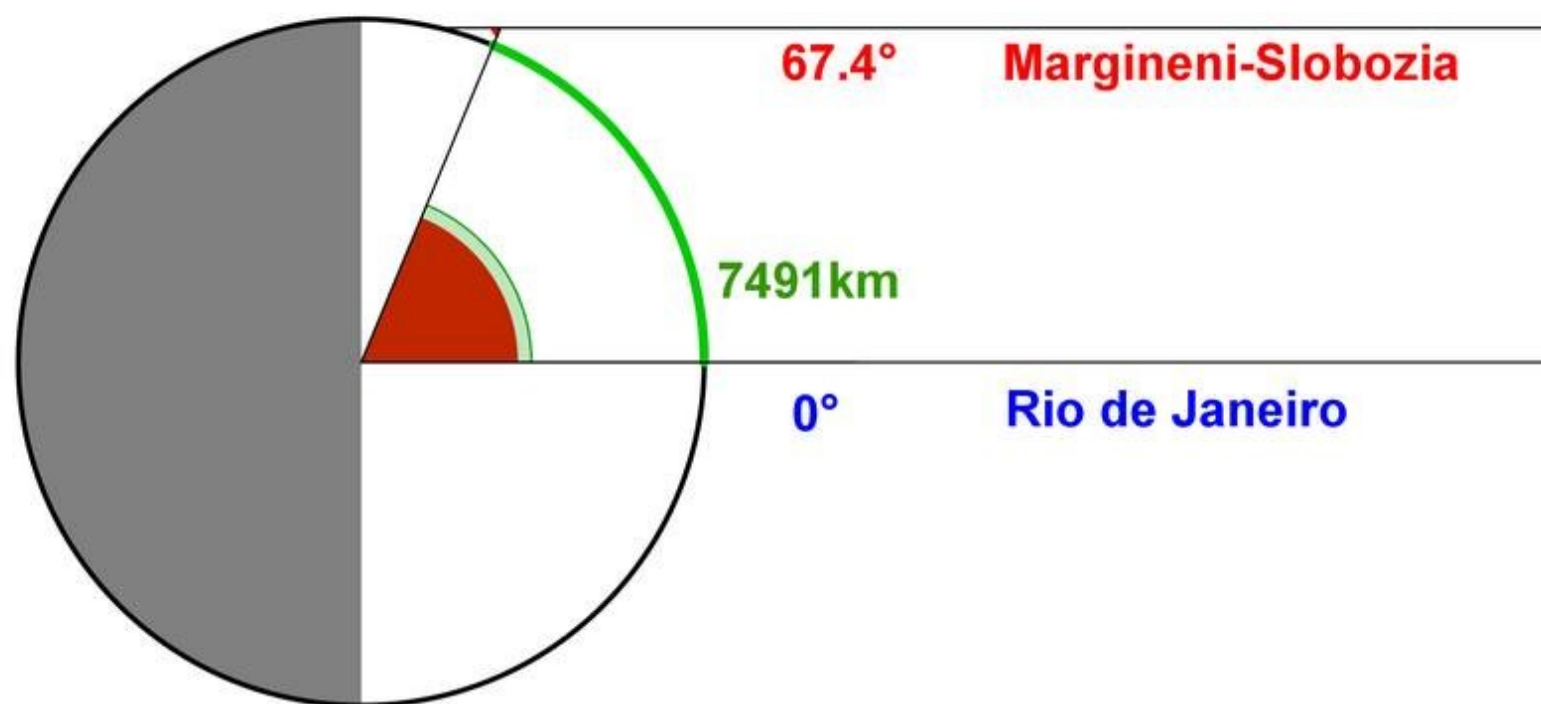


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Mărgineni	Romania	Gh. Popescu School	44.533	24.554

Date	Gnomon	Shadow	Angle
20 December 2018	100.0 cm	244.0 cm	67.7 °
21 December 2018	100.0 cm	239.8 cm	67.4 °

21/12/2018 (Margineni-Slobozia-Romania) Latitude: 44.533°

21/12/2018 (Rio de Janeiro-Brazil) Latitude: -22.89°



$$\text{circumference} = \frac{360^\circ \times 7491\text{km}}{67.4^\circ + 0^\circ} = 40011 \text{ km}$$



Secondary School Gh. Popescu, ROMANIA

20.12.2018

Petroupoli, Greece

December 2018

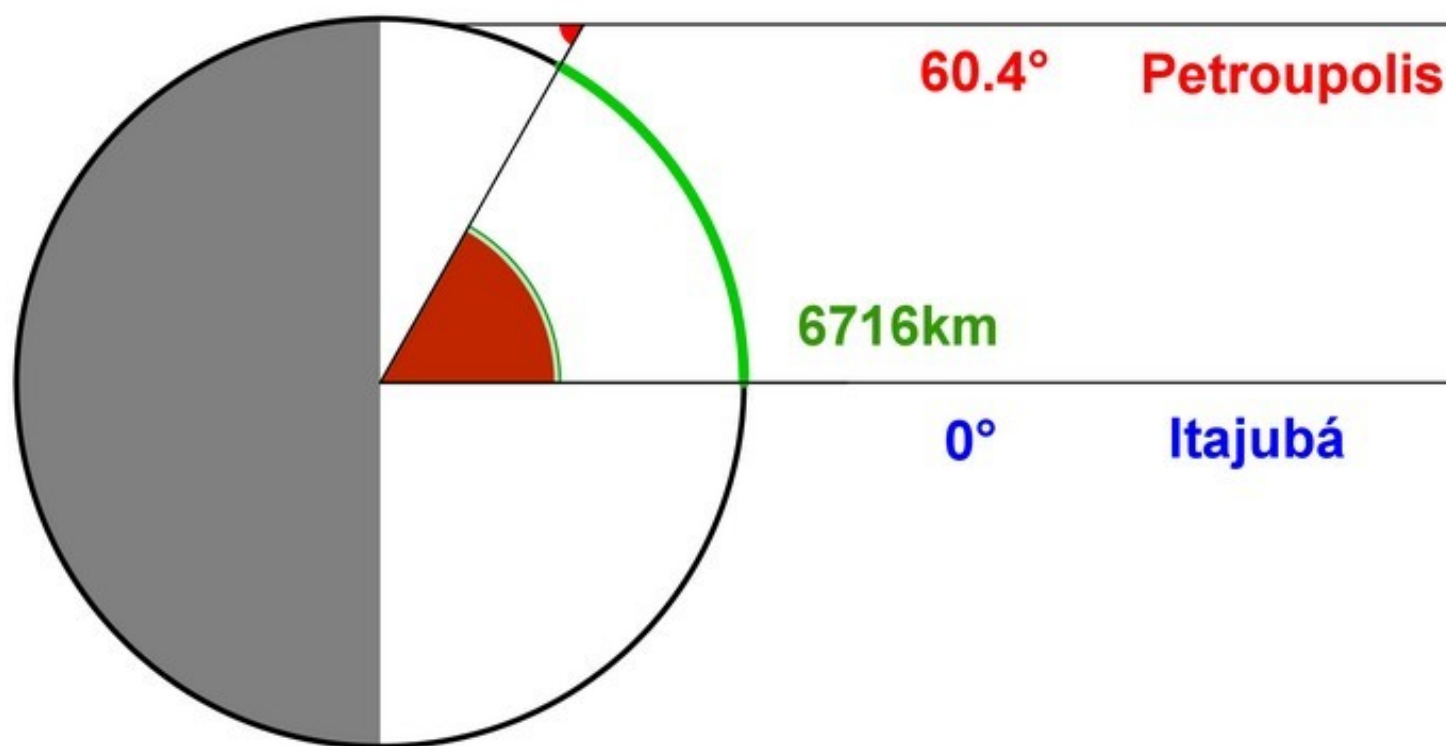


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Petroupoli	Greece	4o Junior High School	38.036	23.674

Date	Gnomon	Shadow	Angle
05 December 2018	52.3 cm	92 cm	60.4 °

05/12/2018 (Petroupolis-Greece) Latitude: 38.036°

05/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 6716\text{km}}{60.4^\circ + 0^\circ} = 40029 \text{ km}$$



Piraeus, Greece

December 2018

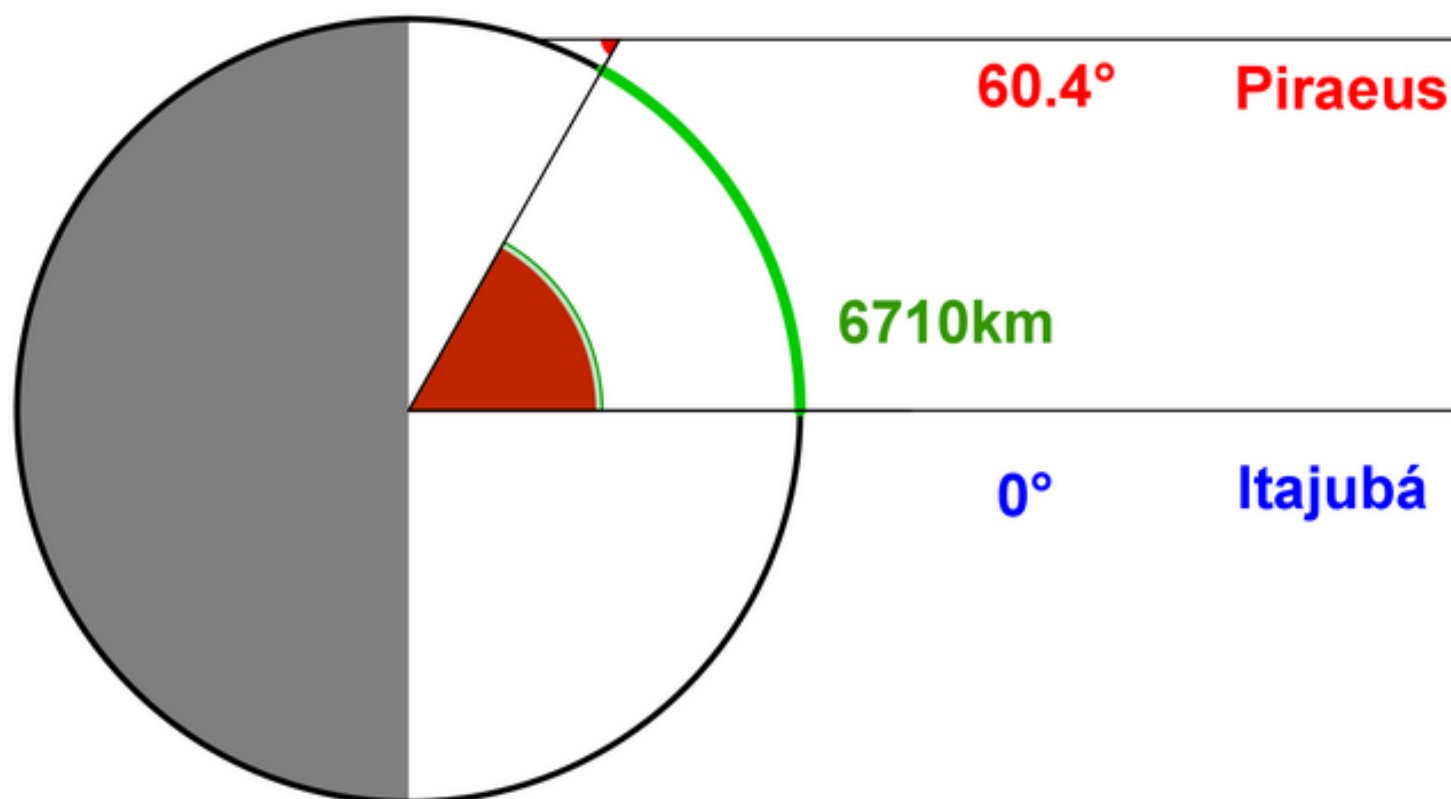


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Piraeus	Greece	2nd Junior High School of Korydallos	37.977	23.655

Date	Gnomon	Shadow	Angle
05 December 2018	100 cm	176 cm	60.4 °

05/12/2018 (Piraeus-Greece) Latitude: 37.977°

05/12/2018 (Itajubá-Brazil) Latitude: -22.415°



$$\text{circumference} = \frac{360^\circ \times 6710\text{km}}{60.4^\circ + 0^\circ} = 39993 \text{ km}$$



Piranguinho, Brazil

December 2018



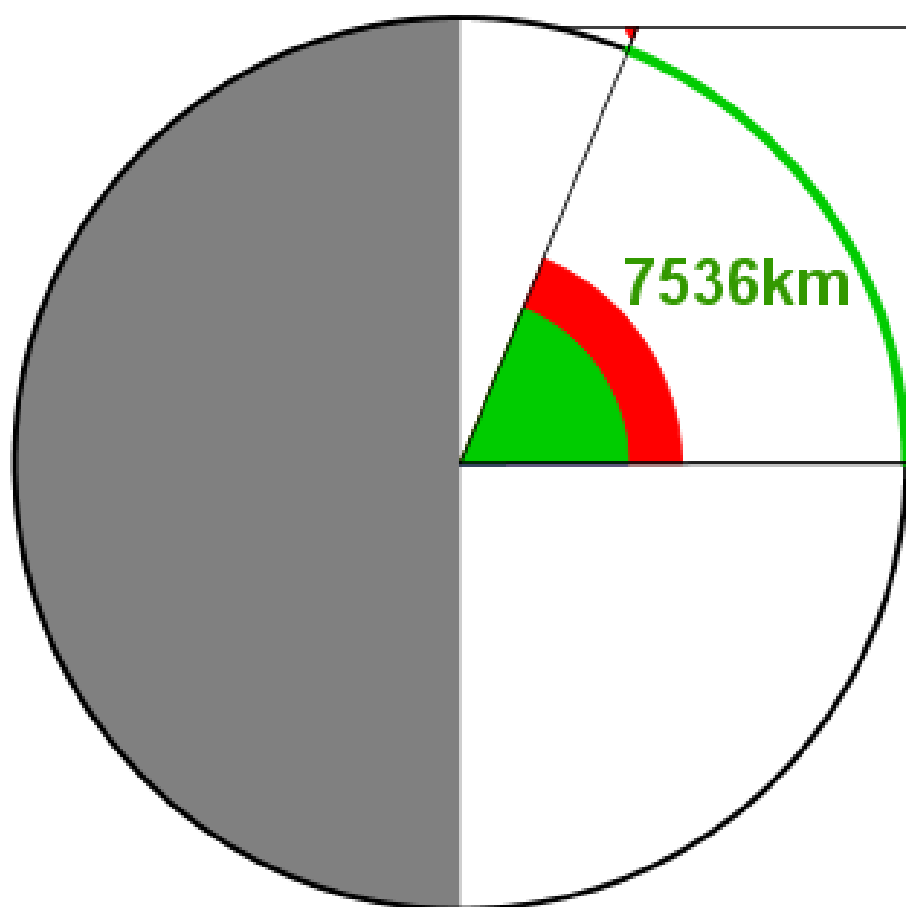
Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Piranguinho	Brazil	Universidade Federal de Itajubá	-22.411	-45.535

Date	Gnomon	Shadow	Angle
06 December 2018	80.8 cm	0.2 cm	0.1 °
18 December 2018	70.0 cm	1.3 cm	1.1 °

06/12/2018 (Busteni-Romania) Latitude: 45.416°

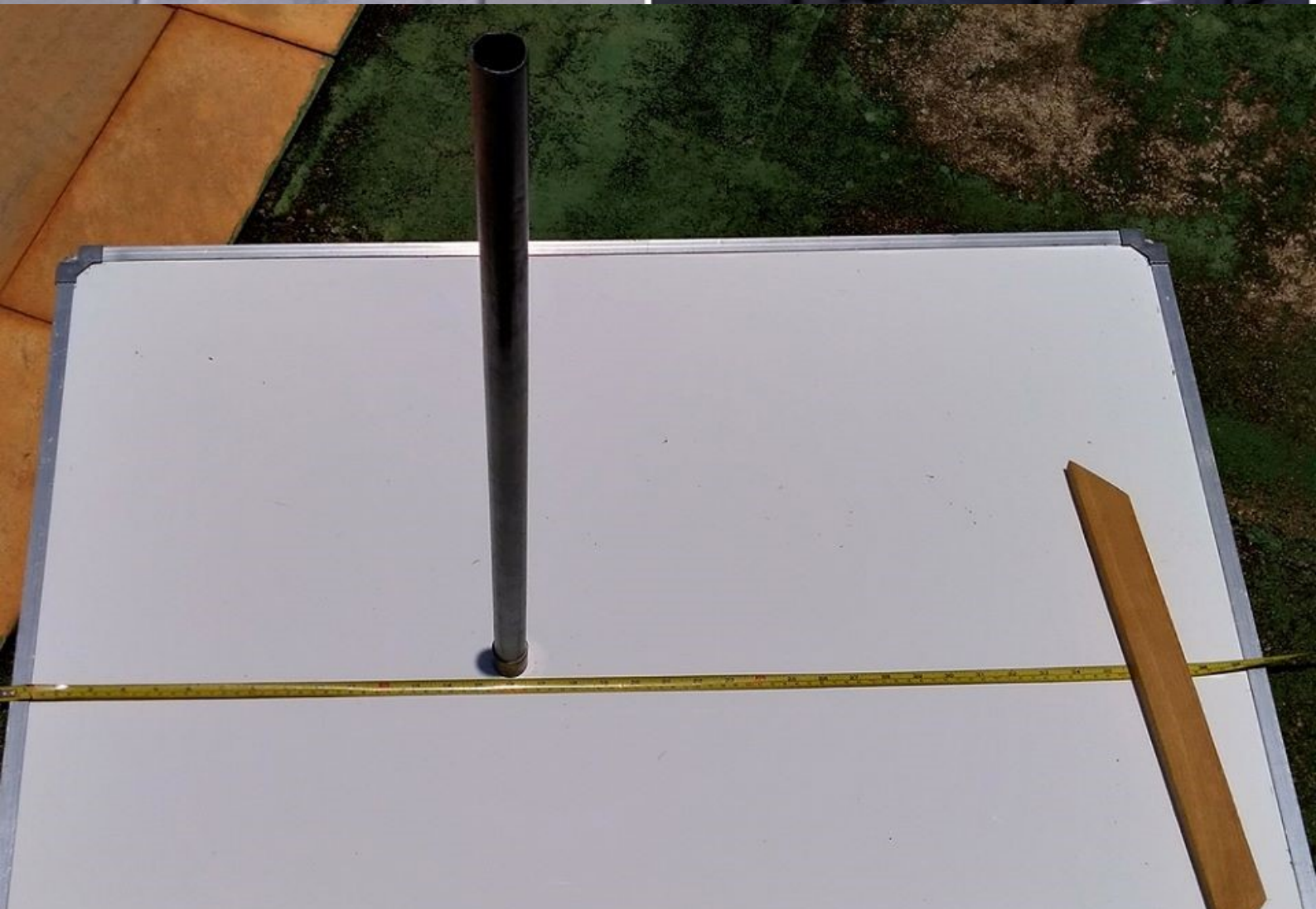
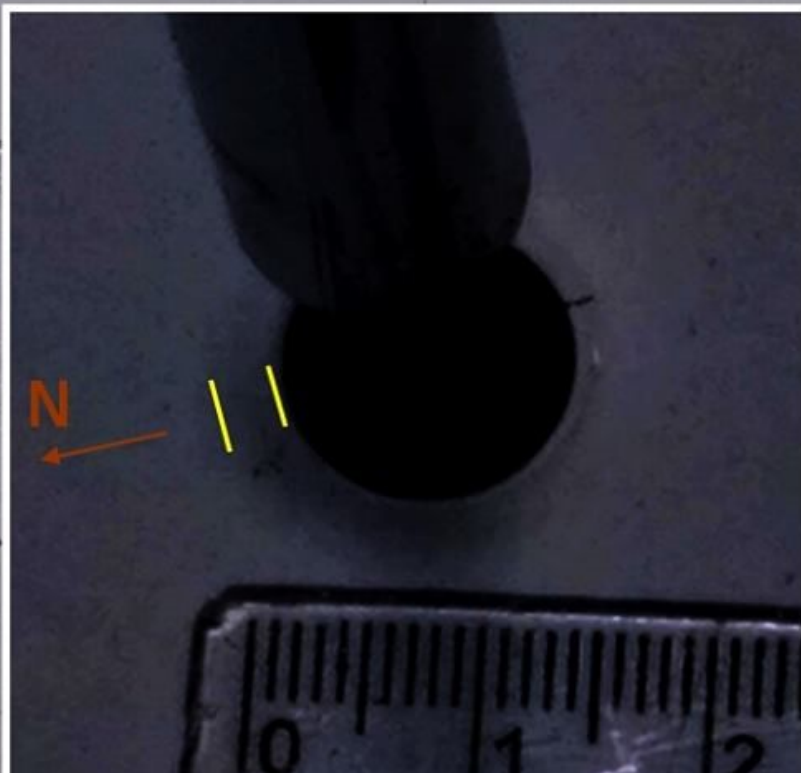
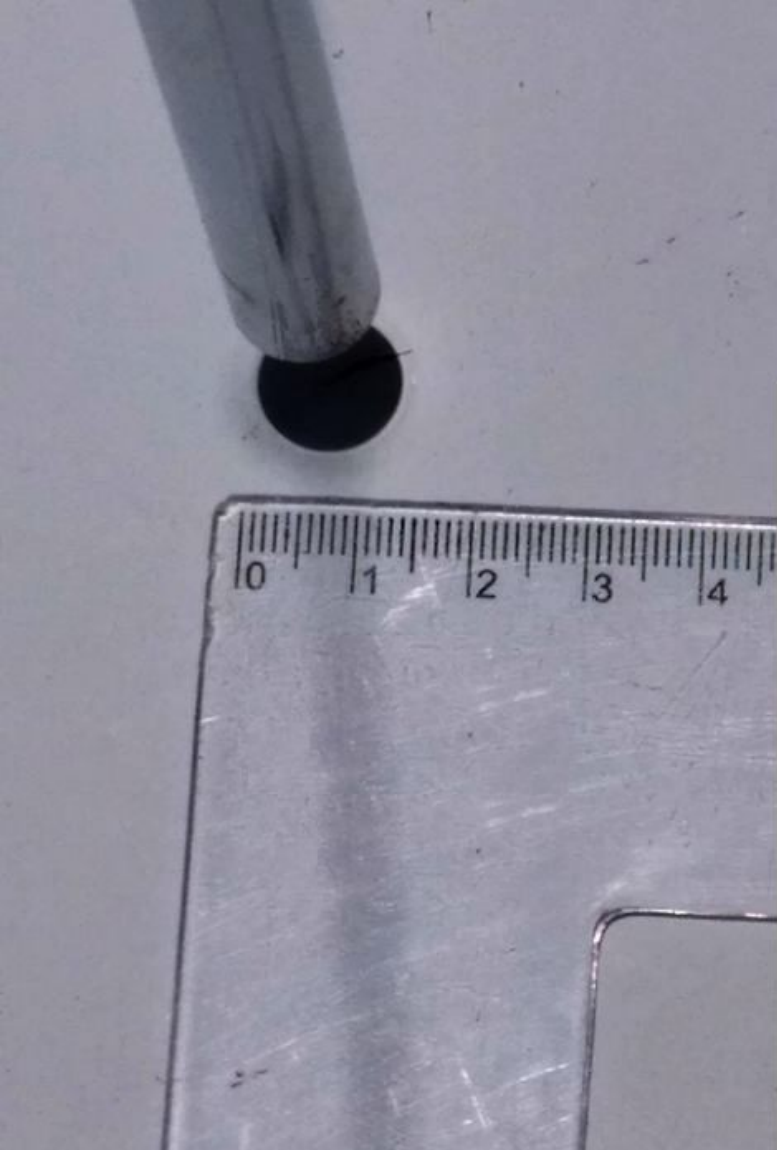
06/12/2018 (Piranguinho-Brazil) Latitude: -22.411°

67.9° Busteni



$$\text{circumference} = \frac{360^\circ \times 7536\text{km}}{67.9^\circ - 0.1^\circ} = 40014 \text{ km}$$

06.12.2018



Pogana, Romania

December 2018



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Pogana	Romania	Scoala Gimnaziala Nr.1 Pogana	46.313	27.575

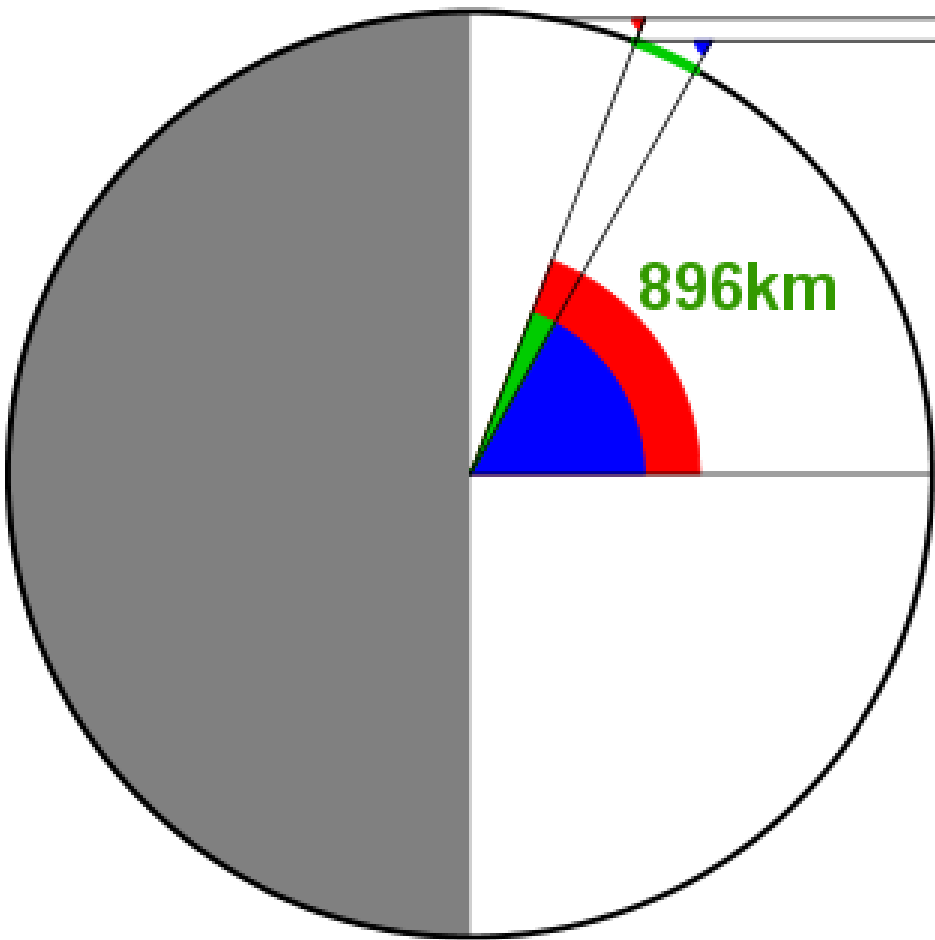
Date	Gnomon	Shadow	Angle
03 December 2018	39.5 cm	99.5 cm	68.3 °
12 December 2018	39.5 cm	103.5 cm	69.1 °

12/12/2018 (Pogana-Romania) Latitude: 46.313°

12/12/2018 (Aigio-Greece) Latitude: 38.252°

69.1° Pogana

60.9° Aigio



circumference = $\frac{360^\circ \times 896\text{km}}{69.1^\circ - 60.9^\circ} = 39337 \text{ km}$



Rio de Janeiro CENOM, Brazil

December 2018

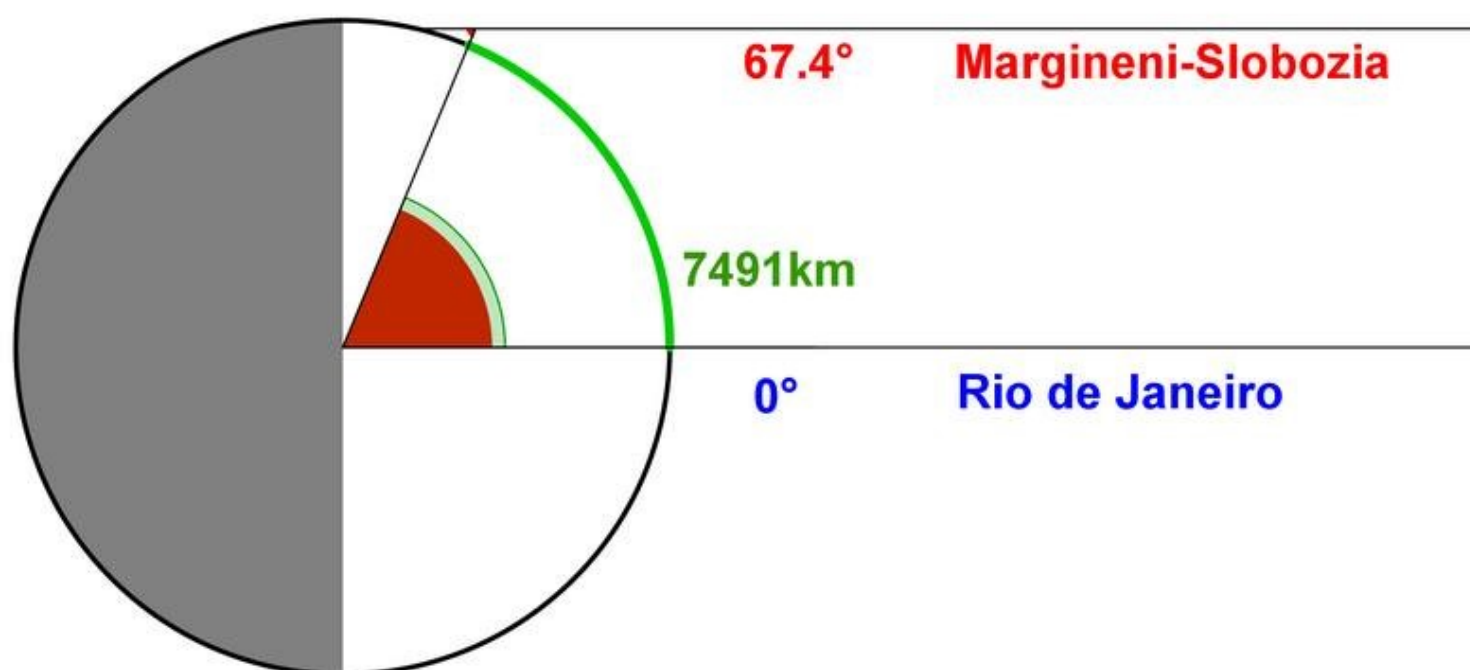


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317

Date	Gnomon	Shadow	Angle
03 December 2018	100 cm	-4 cm	-2.3 °
10 December 2018	100.0 cm	2.0 cm	1.1 °
13 December 2018	100.0 cm	1.0 cm	0.6 °
14 December 2018	100.0 cm	1.0 cm	0.6 °
18 December 2018	100.0 cm	1.0 cm	0.6 °
21 December 2018	100.0 cm	0.0 cm	0.0 °
31 December 2018	15 cm	2.0 cm	7.6 °

21/12/2018 (Margineni-Slobozia-Romania) Latitude: 44.533°

21/12/2018 (Rio de Janeiro-Brazil) Latitude: -22.89°



$$\text{circumference} = \frac{360^\circ \times 7491\text{km}}{67.4^\circ + 0^\circ} = 40011 \text{ km}$$



Rio de Janeiro Tiradentes, Brazil

December 2018

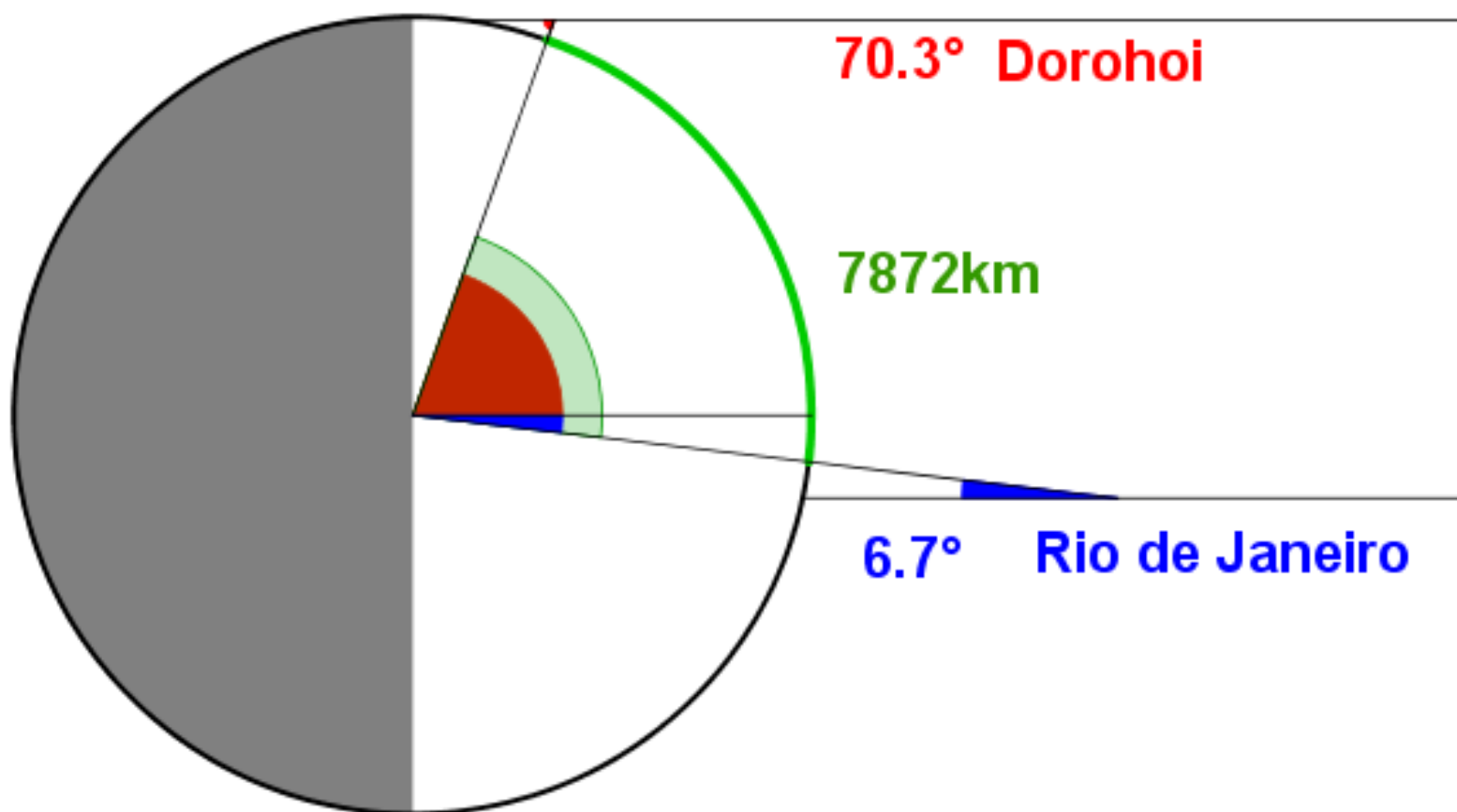


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Palácio Tiradentesl	-22.904	-43.174

Date	Gnomon	Shadow	Angle
04 December 2018	300 cm	-35 cm	-6.7 °

04/12/2018 (Dorohoi-Romania) Latitude: 47.953°

04/12/2018 (Rio de Janeiro-Brazil) Latitude: -22.904°



$$\text{circumference} = \frac{360^\circ \times 7872\text{km}}{70.3^\circ + 6.7^\circ} = 36804 \text{ km}$$



Yamunanagar, India

December 2018

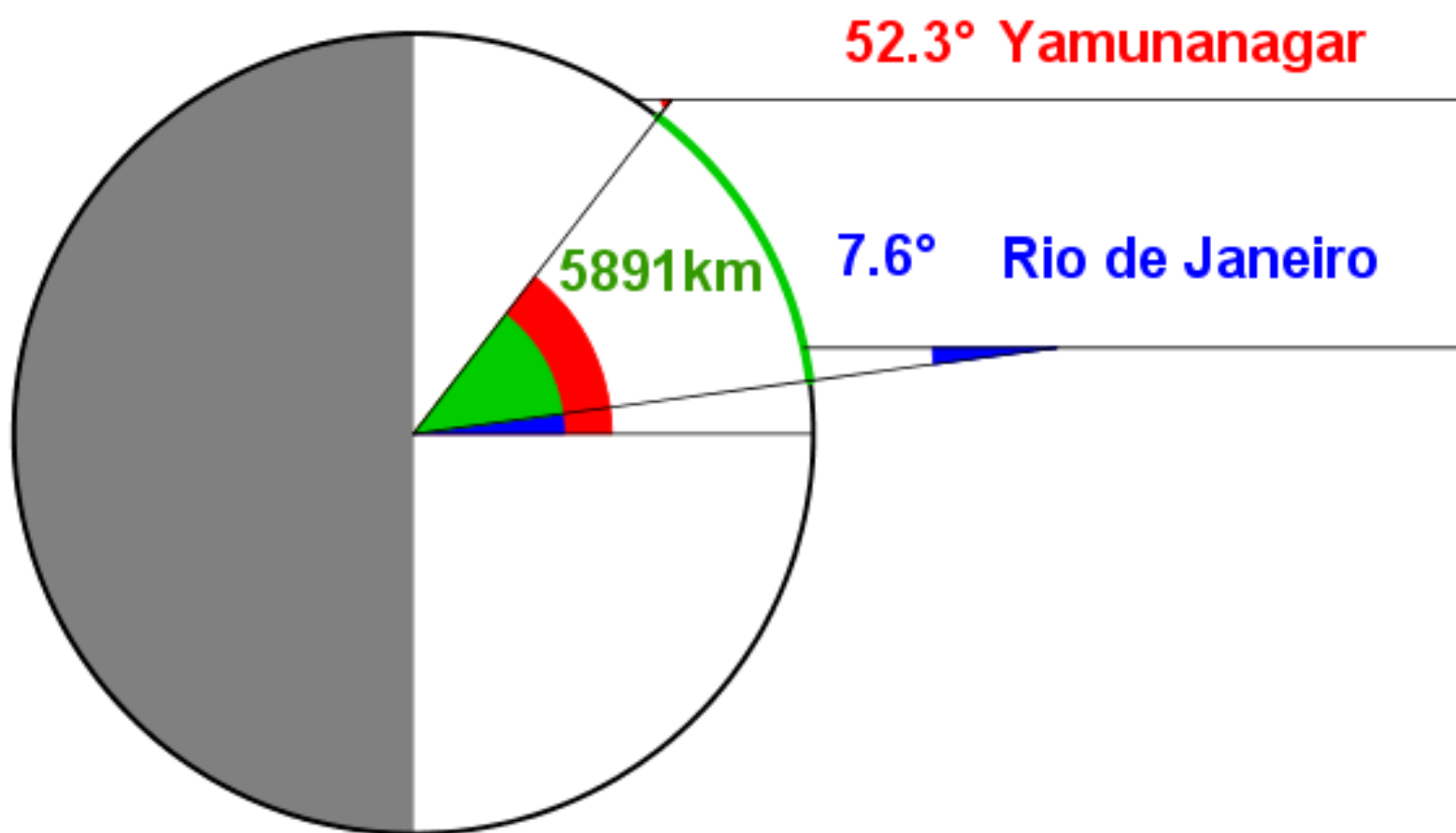


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Yamunanagar	India	DIE&T Tejli	30.134	77.310

Date	Gnomon	Shadow	Angle
31 December 2018	39 cm	50.4 cm	52.3 °

31/12/2018 (Yamunanagar-India) Latitude: 30.134°

31/12/2018 (Rio de Janeiro-Brazil) Latitude: -22.89°



$$\text{circumference} = \frac{360^\circ \times 5891\text{km}}{52.3^\circ - 7.6^\circ} = 47444 \text{ km}$$



City	Partner	Circumference (km)	Date
Aigio	Itajubá	39974	17 December
Alta Gracia			December
Athens	Lafrançaise	40013	17 December
Bizerte	Itajubá	40200	11 December
Brštanovo	Piranguinho	39681	11 December
Busteni	Piranguinho	40014	06 December
Dholpur	Itajubá	40733	05 December
Dorohoi	Itajubá	39978	04 December
Guarne	Busteni	40985	20 December
Itajubá	Piraeus	39993	05 December
Kashipur	Busteni	39295	22 December
Kota	Itajubá	45828	13 December
Lafrançaise	Athens	40013	17 December
Margineni	Rio de Janeiro cenom	40011	21 December
Petroupoli	Itajubá	40029	05 December
Piraeus	Itajubá	39993	05 December
Piranguinho	Busteni	40014	06 December
Pogana	Aigio	39337	12 December
Rio de Jan Tiradentes	Dorohoi	36804	04 December
Rio de Janeiro cenom	Margineni	40011	21 December
Yamunanagar	Rio de Janeiro cenom	47444	31 December
Average		40153	