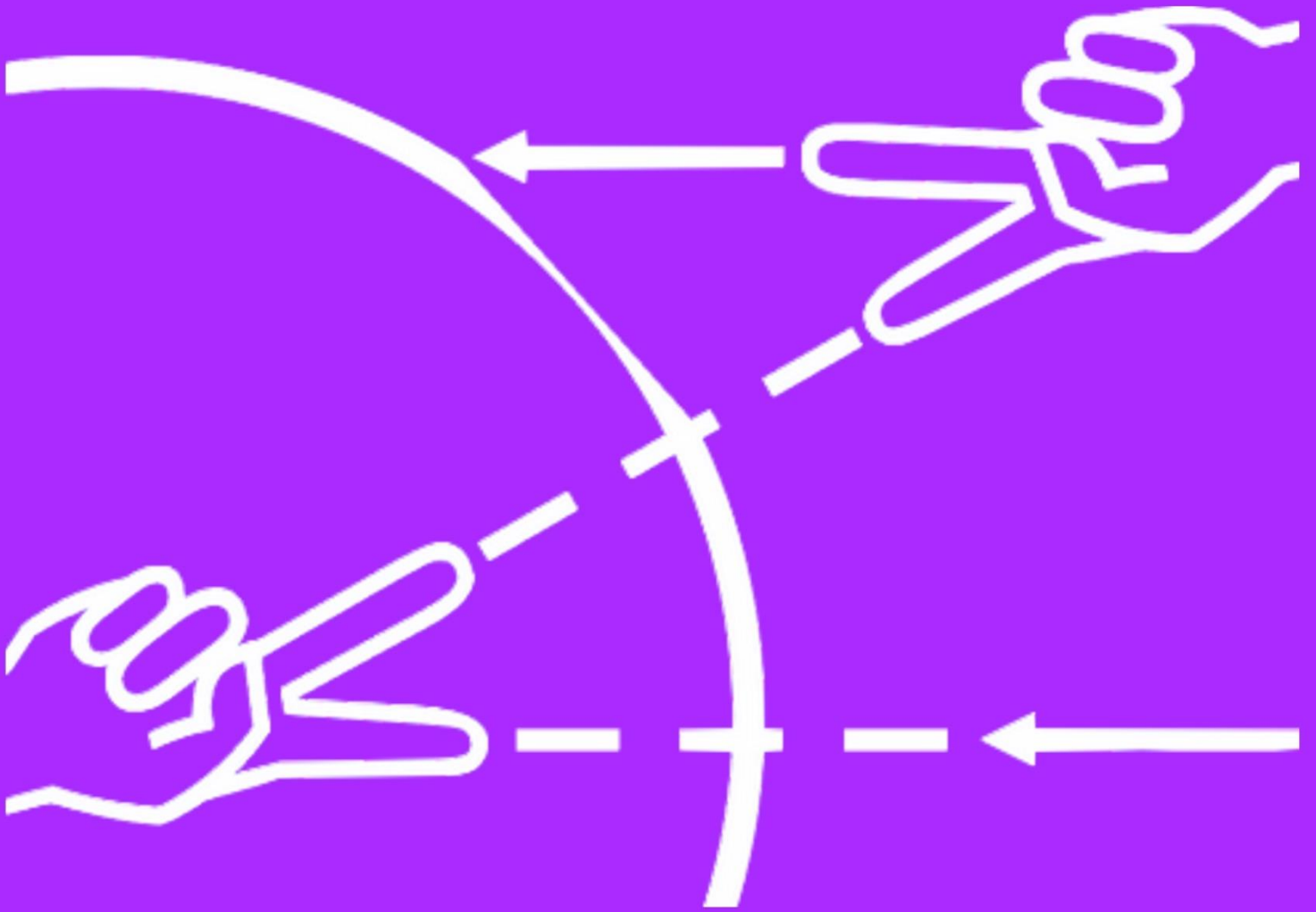


Eratosthenes



November 2017

3 Continents

9 Countries

20 Schools

64 Measures

ARGENTINA (3)

Alta Gracia, Rio Cuarto, San Bernardo

BRAZIL (4)

Itajubá, Piranguinho, Rio de Janeiro (2)

COLOMBIA (2)

Guarne, Medellín

CROATIA (1)

Brštanovo

FRANCE (1)

Lafrançaise

GREECE (6)

Aigio, Andritsaina, Athens, Ilion, Ioannina, Petroupoli, Piraeus

ITALY (1)

Merlara

ROMANIA (1)

Busteni

TUNISIA (1)


Mohammedia

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
	Andritsaina	Greece	Gymnasio Andritsainas	34.484	21.909
	Athens	Greece	Experimental College Agion Anargyron	38.027	23.726
	Brštanovo	Croatia	Osnovna škola kneza Branimira	43.658	16.415
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449
	Ilion	Greece	11th JuniorHigh School of Ilion	38.033	23.697
	Itajubá	Brazil	Universidade Federal de Itajubá	-22.415	-45.449
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237
	Medellín	Colombia	Claustro Comfama	6.240	-75.560
	Merlara	Italy	Lower Secondary School "Dante Alighieri"	45.166	11.433
	Mohammedia	Tunisia	Lycée M'hamdia	36.678	10.152
	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
	Rio de Janeiro	Brazil	Museu do Amanhã	-22.895	-43.182
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317
	Rio Cuarto	Argentina	Colegio Concordia	-33.149	-64.351
	San Bernardo	Argentina		-36.684	-56.678

Aigio, Greece

November 2017

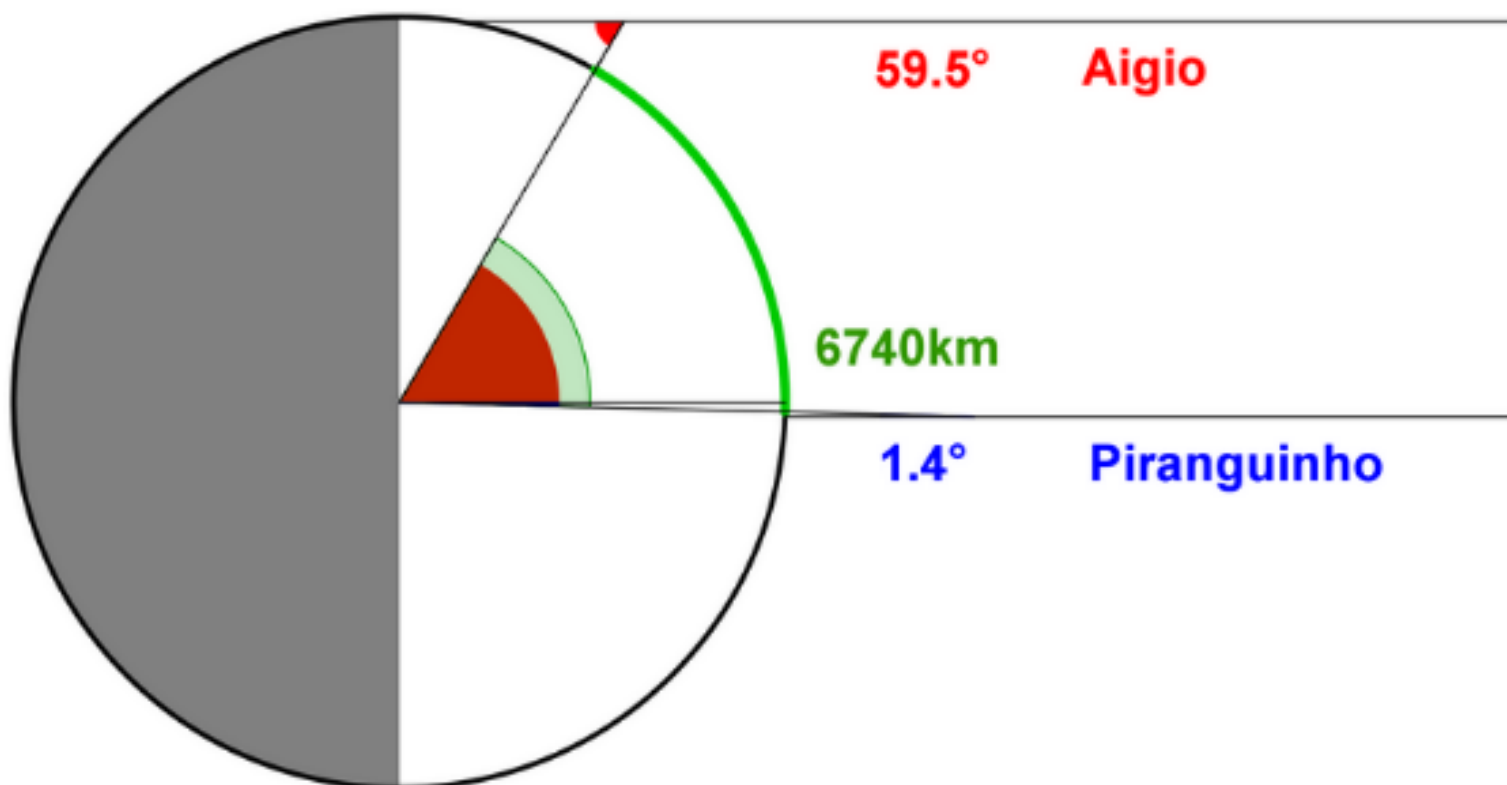


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079

Date	Gnomon	Shadow	Angle
06 November	50 cm	68.5 cm	53.9 °
28 November	50 cm	85 cm	59.5 °

28/11/2017 (Aigio-Greece) Latitude: 38.252°

28/11/2017 (Piranguinho-Brazil) Latitude: -22.411°



$$\text{circumference} = \frac{360^\circ \times 6740\text{km}}{59.5^\circ + 1.4^\circ} = 39842 \text{ km}$$



Alta Gracia, Argentina

November 2017

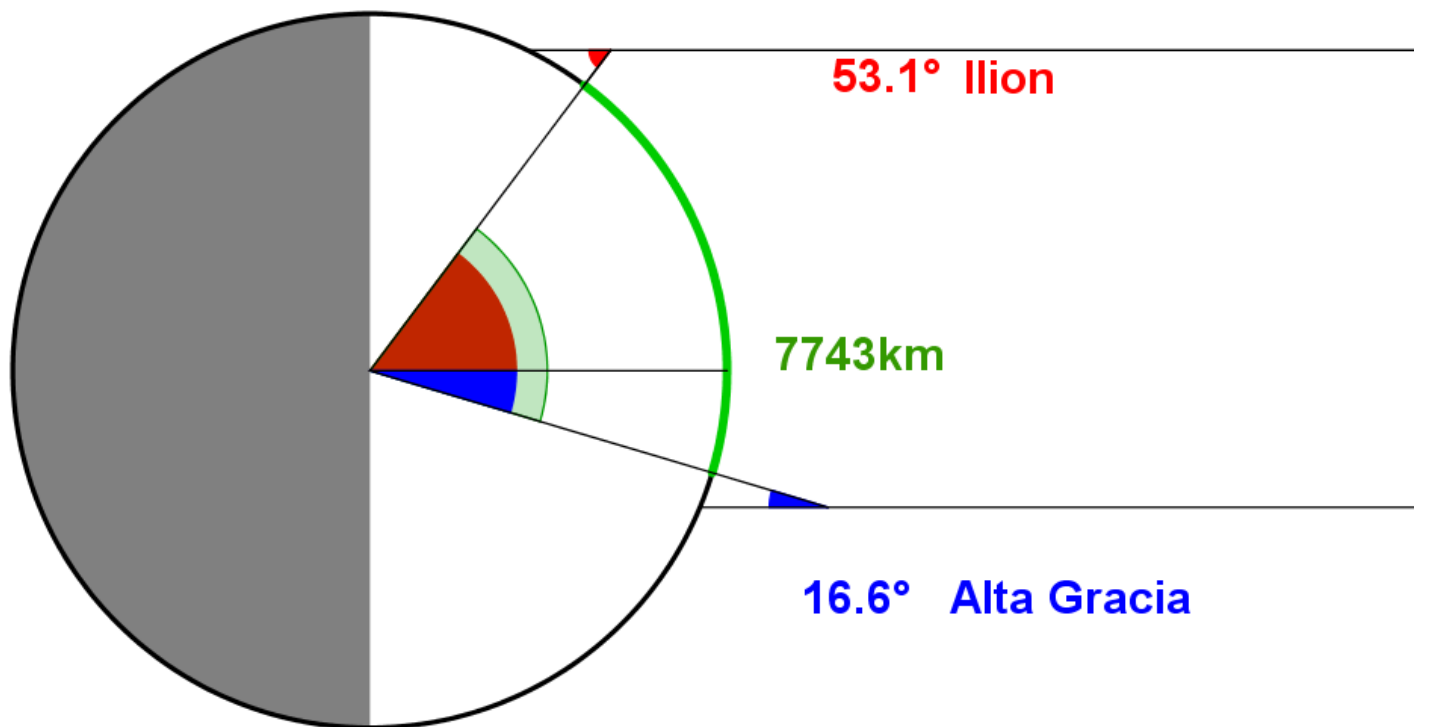


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Alta Gracia	Argentina	Fundación Caminos de Anisacate	-31.659	-64.417

Date	Gnomon	Shadow	Angle
01 November	39 cm	-11.8 cm	-16.8 °
02 November	39 cm	-11.6 cm	-16.6 °
06 November	39 cm	-10.7 cm	-15.3 °
22 November	39 cm	-7.5 cm	-10.9 °
23 November	39 cm	-7.5 cm	-10.7 °
24 November	39 cm	-7.1 cm	-10.3 °
25 November	39 cm	-7.0 cm	-10.2 °
28 November	39 cm	-6.8 cm	-9.9 °
29 November	39 cm	-6.6 cm	-9.6 °

02/11/2017 (Ilion-Greece) Latitude: 38.033°

02/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°

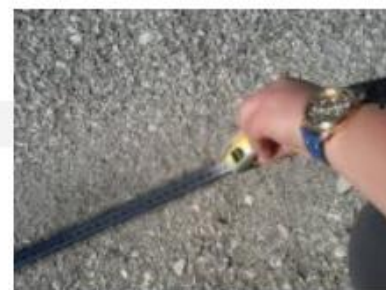


$$\text{circumference} = \frac{360^\circ \times 7743\text{km}}{53.1^\circ + 16.6^\circ} = 39993 \text{ km}$$



Andritsaina, Greece

November 2017

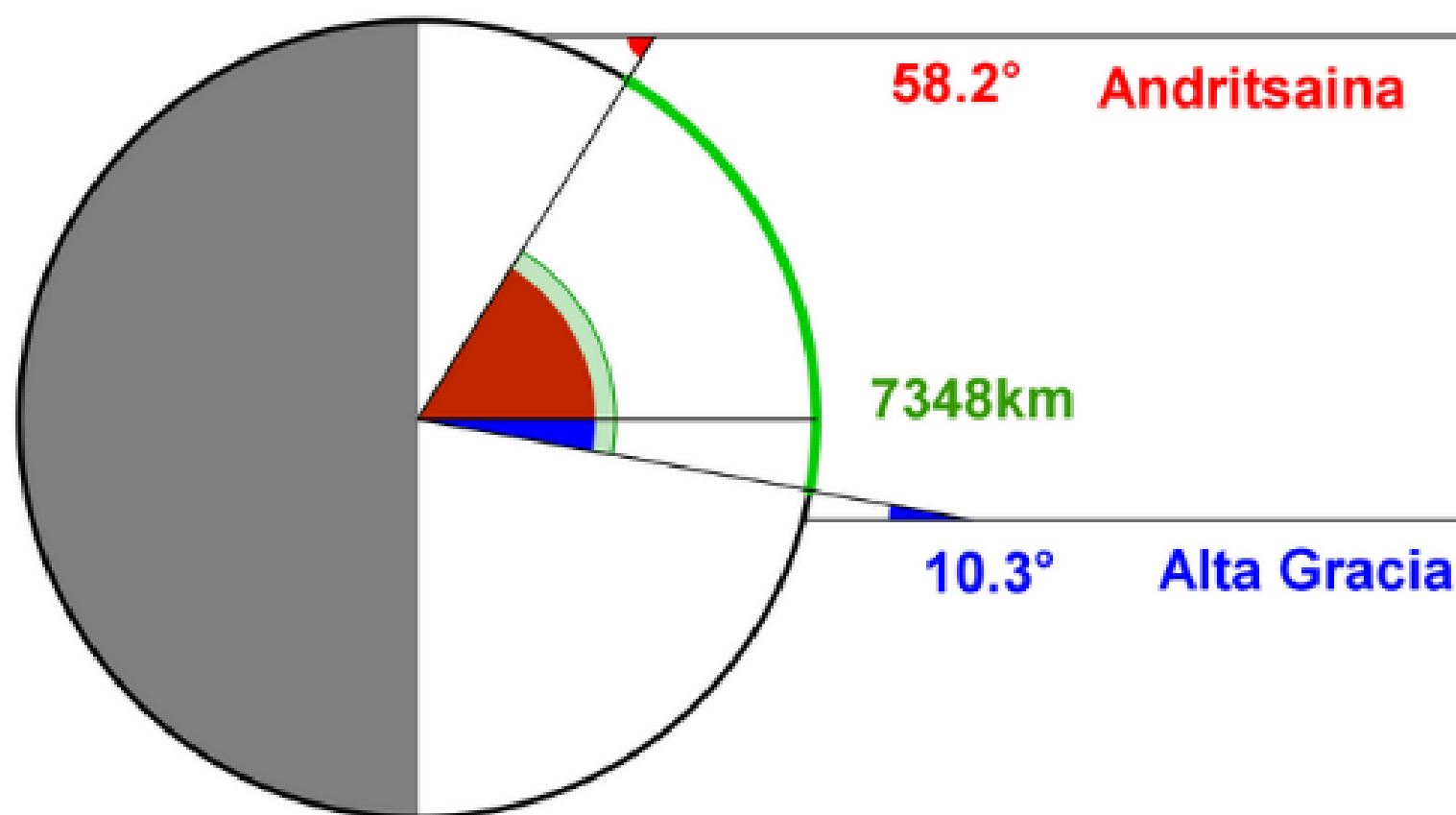


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Andritsaina	Greece	Gymnasio Andritsainas	34.484	21.909

Date	Gnomon	Shadow	Angle
24 November	100 cm	161 cm	58.2 °

24/11/2017 (Andritsaina-Greece) Latitude: 34.484°

24/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°



$$\text{circumference} = \frac{360^\circ \times 7348\text{km}}{58.2^\circ + 10.3^\circ} = 38617 \text{ km}$$



Athens, Greece

November 2017

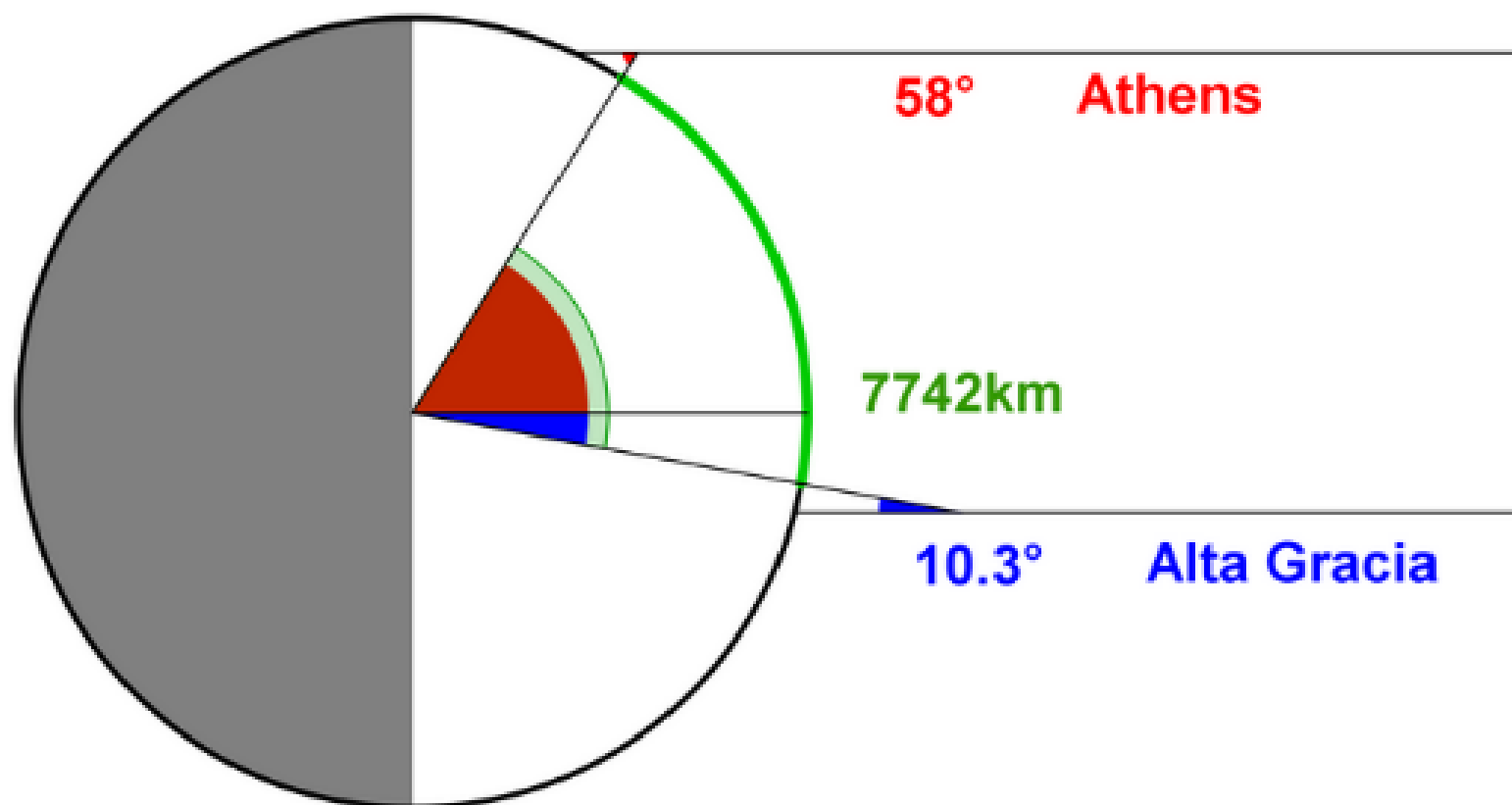


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Athens	Greece	Experimental College Agion Anargyron	38.027	23.726

Date	Gnomon	Shadow	Angle
03 November	247 cm	330 cm	53.2 °
24 November	247 cm	395 cm	58 °

24/11/2017 (Athens-Greece) Latitude: 38.027°

24/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°



$$\text{circumference} = \frac{360^\circ \times 7742\text{km}}{58^\circ + 10.3^\circ} = 40807 \text{ km}$$



Brštanovo, Croatia

November 2017



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

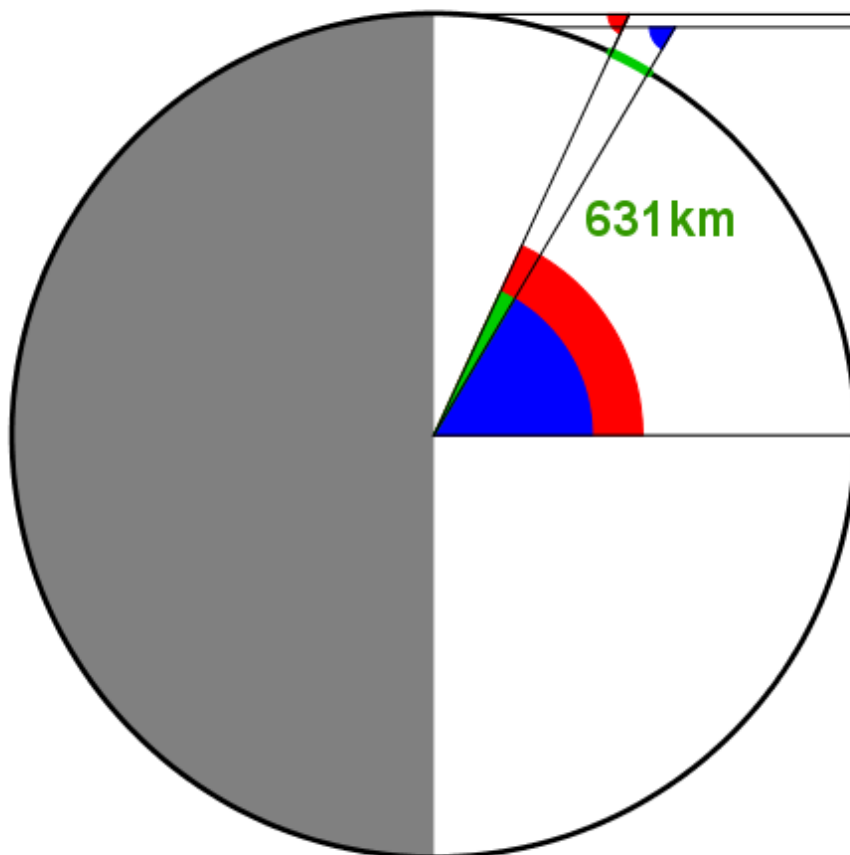
Date	Gnomon	Shadow	Angle
10 November	100 cm	182 cm	61.2 °
20 November	100 cm	200.6 cm	63.5 °
21 November	100 cm	202.4 cm	63.7 °
22 November	100 cm	203.5 cm	63.8 °
28 November	100 cm	215 cm	65.1 °

28/11/2017 (Brštanovo-Croatia) Latitude: 43.658°

28/11/2017 (Piraeus-Greece) Latitude: 37.977°

65.1° Brštanovo

59.4° Piraeus



$$\text{circumference} = \frac{360^\circ \times 631 \text{ km}}{65.1^\circ - 59.4^\circ} = 39853 \text{ km}$$



Busteni, Romania

November 2017

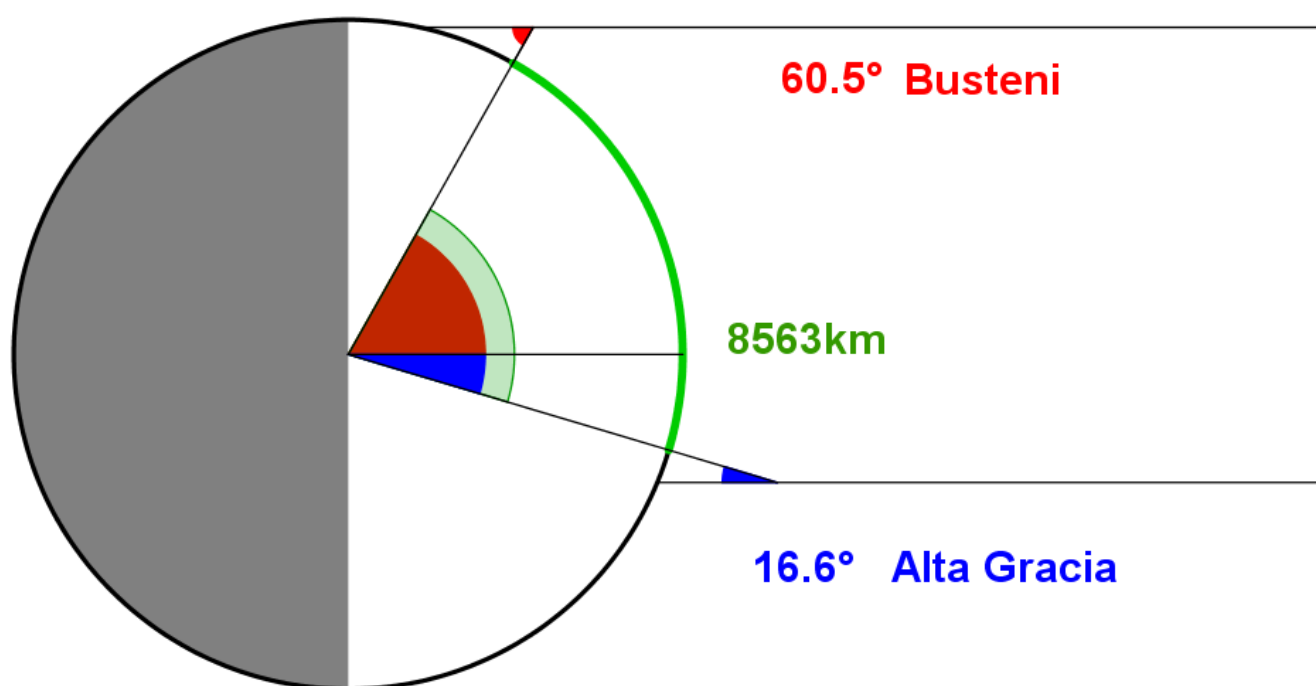


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535

Date	Gnomon	Shadow	Angle
01 November	100 cm	174.7 cm	60.2 °
02 November	100 cm	177 cm	60.5 °
07 November	100 cm	188 cm	62 °
13 November	15 cm	30.3 cm	63.7 °
15 November	14 cm	29 cm	64.2 °
20 November	27.6 cm	60 cm	65.3 °
23 November	100 cm	223.5 cm	65.9 °
24 November	66.5 cm	150 cm	66.1 °
25 November	22 cm	50 cm	66.3 °
29 November	64 cm	150 cm	66.9 °

02/11/2017 (Busteni-Romania) Latitude: 45.416°

02/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°



$$\text{circumference} = \frac{360^\circ \times 8563\text{km}}{60.5^\circ + 16.6^\circ} = 39983 \text{ km}$$



Guarne, Colombia

November 2017

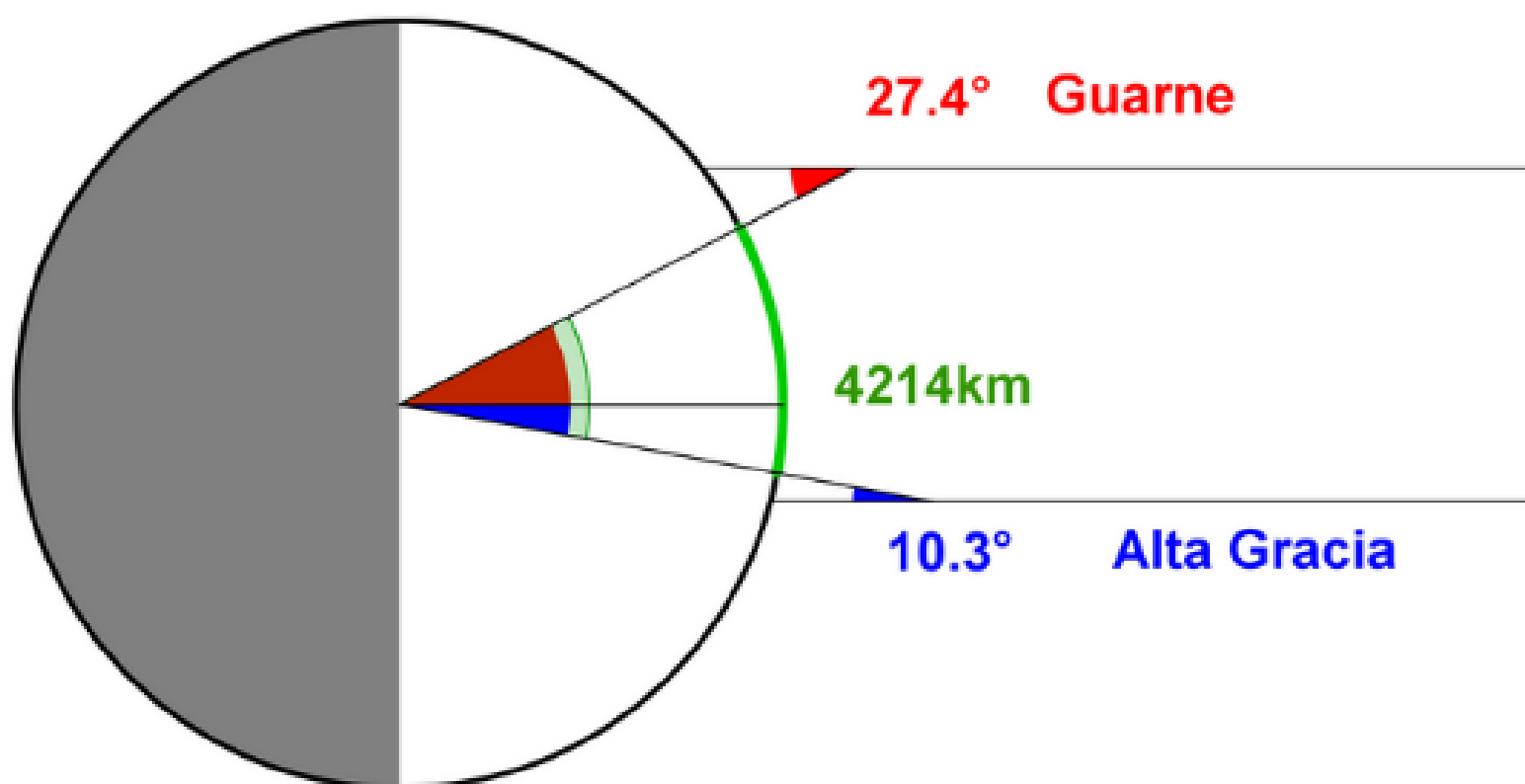


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449

Date	Gnomon	Shadow	Angle
03 November	64.8 cm	26.4 cm	22.2 °
16 November	64.8 cm	31 cm	25.6 °
24 November	64.8 cm	33.6 cm	27.4 °

24/11/2017 (Guarne-Colombia) Latitude: 6.274°

24/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°



$$\text{circumference} = \frac{360^\circ \times 4214\text{km}}{27.4^\circ + 10.3^\circ} = 40240 \text{ km}$$



Ilion, Greece

November 2017

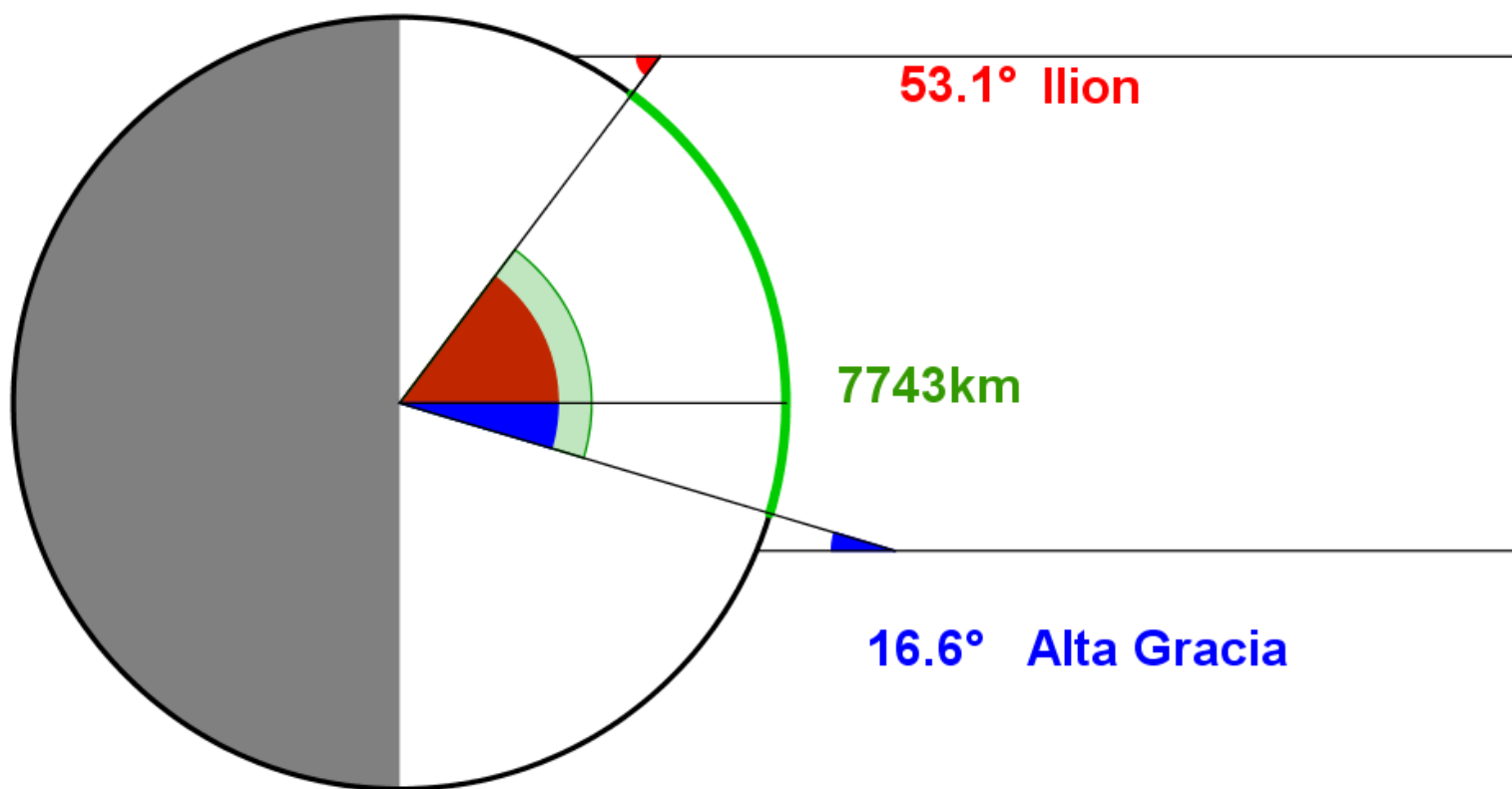


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Ilion	Greece	11th JuniorHigh School of Ilion	38.033	23.697

Date	Gnomon	Shadow	Angle
02 November	30.4 cm	40.5 cm	53.1 °
09 November	119 cm	171 cm	55.2 °
14 November	30.4 cm	46 cm	56.5 °
21 November	30.4 cm	48.8 cm	58.1 °
23 November	30.4 cm	49.6 cm	58.5 °

02/11/2017 (Ilion-Greece) Latitude: 38.033°

02/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°



$$\text{circumference} = \frac{360^\circ \times 7743\text{km}}{53.1^\circ + 16.6^\circ} = 39993 \text{ km}$$



Itajubá, Brazil

November 2017

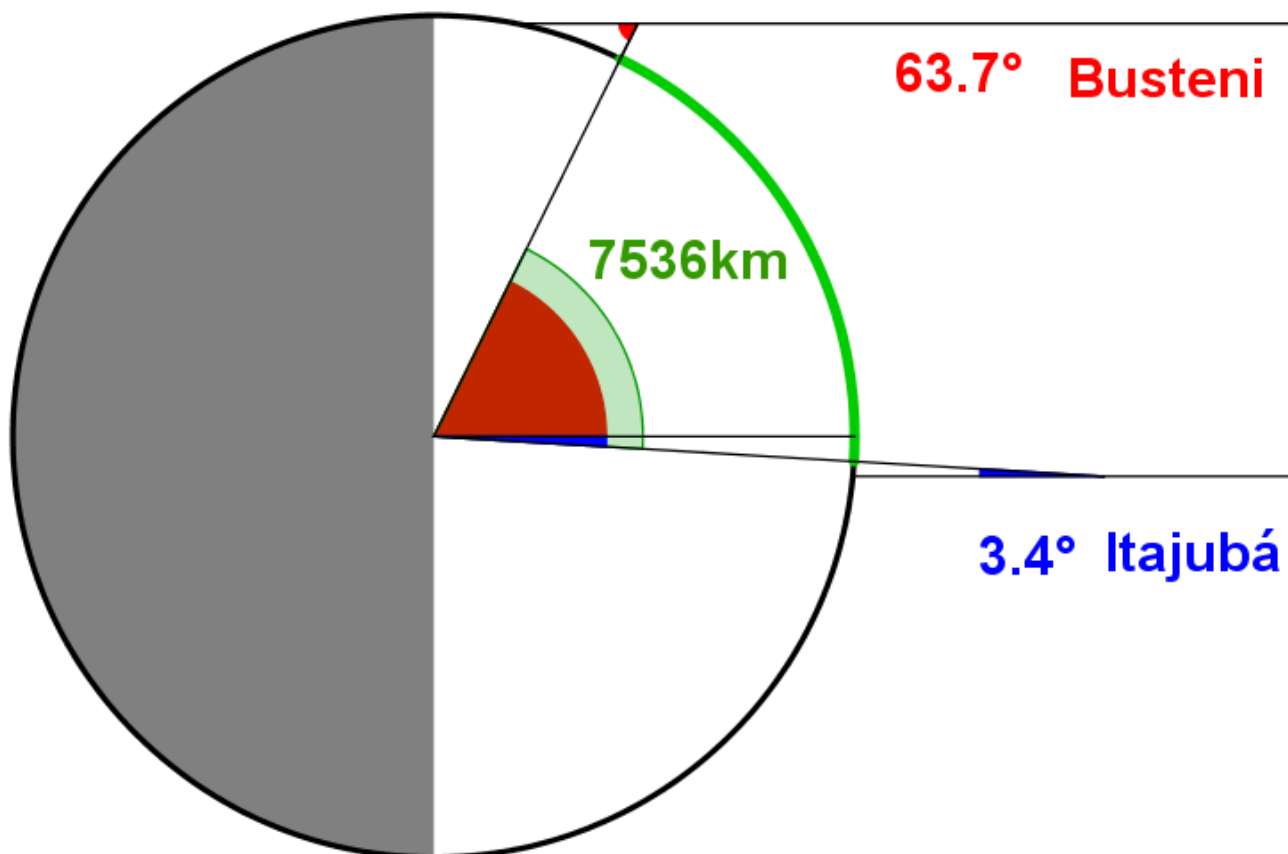


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Itajubá	Brazil	Universidade Federal de Itajubá	-22.415	-45.449

Date	Gnomon	Shadow	Angle
13 November	81.5 cm	-4.9 cm	-3.4 °

13/11/2017 (Busteni-Romania) Latitude: 45.416°

13/11/2017 (Itajubá-Brazil) Latitude: -22.415°




$$\text{circumference} = \frac{360^\circ \times 7536\text{km}}{63.7^\circ + 3.4^\circ} = 40432 \text{ km}$$



Lafrançaise, France

November 2017

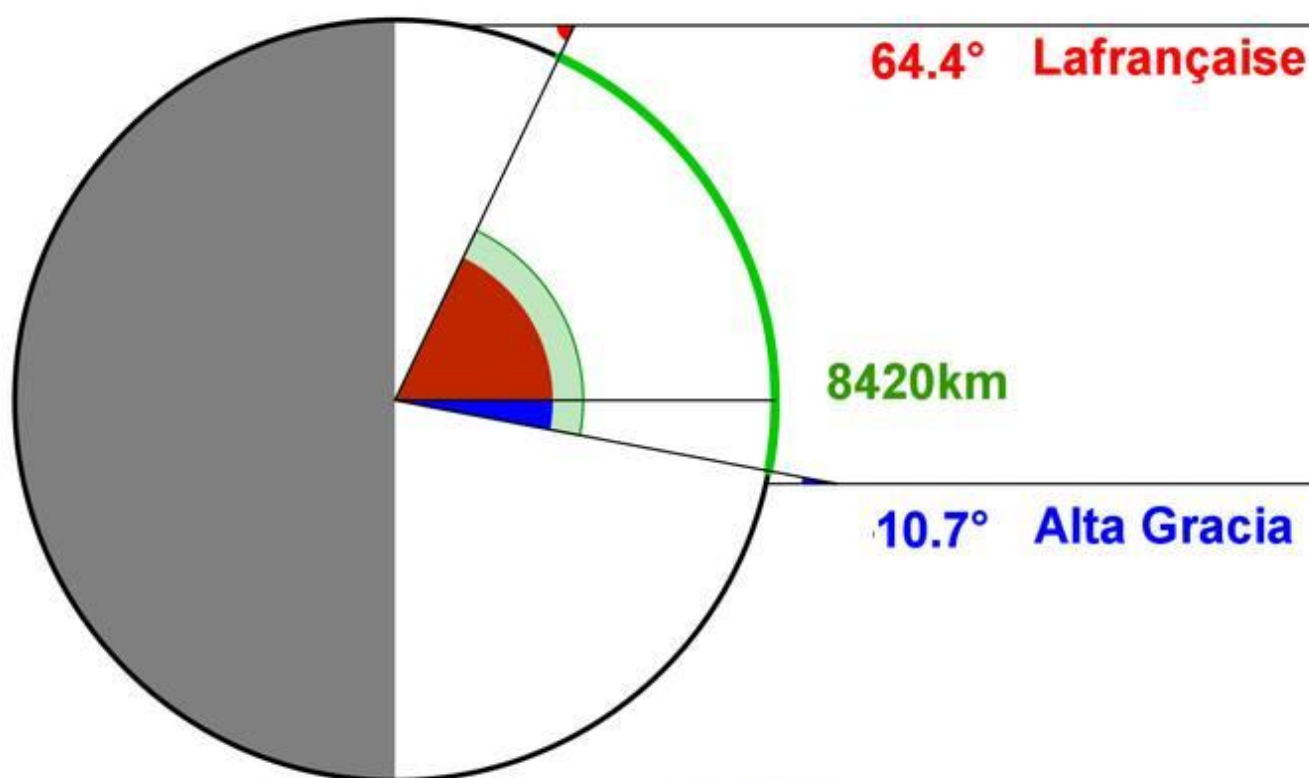


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237

Date	Gnomon	Shadow	Angle
06 November	100 cm	174 cm	60.1 °
13 November	100 cm	188.5 cm	62.1 °
23 November	100 cm	209 cm	64.4 °
24 November	100 cm	212 cm	64.7 °
27 November	100 cm	218 cm	65.4 °
30 November	100 cm	221 cm	65.7 °

23/11/2017 (Lafrançaise-France) Latitude: 44.127°

23/11/2017 (Alta Gracia-Argentina) Latitude: -31.659°




$$\text{circumference} = \frac{360^\circ \times 8420\text{km}}{64.4^\circ + 10.7^\circ} = 40362 \text{ km}$$



Medellín, Colombia

November 2017



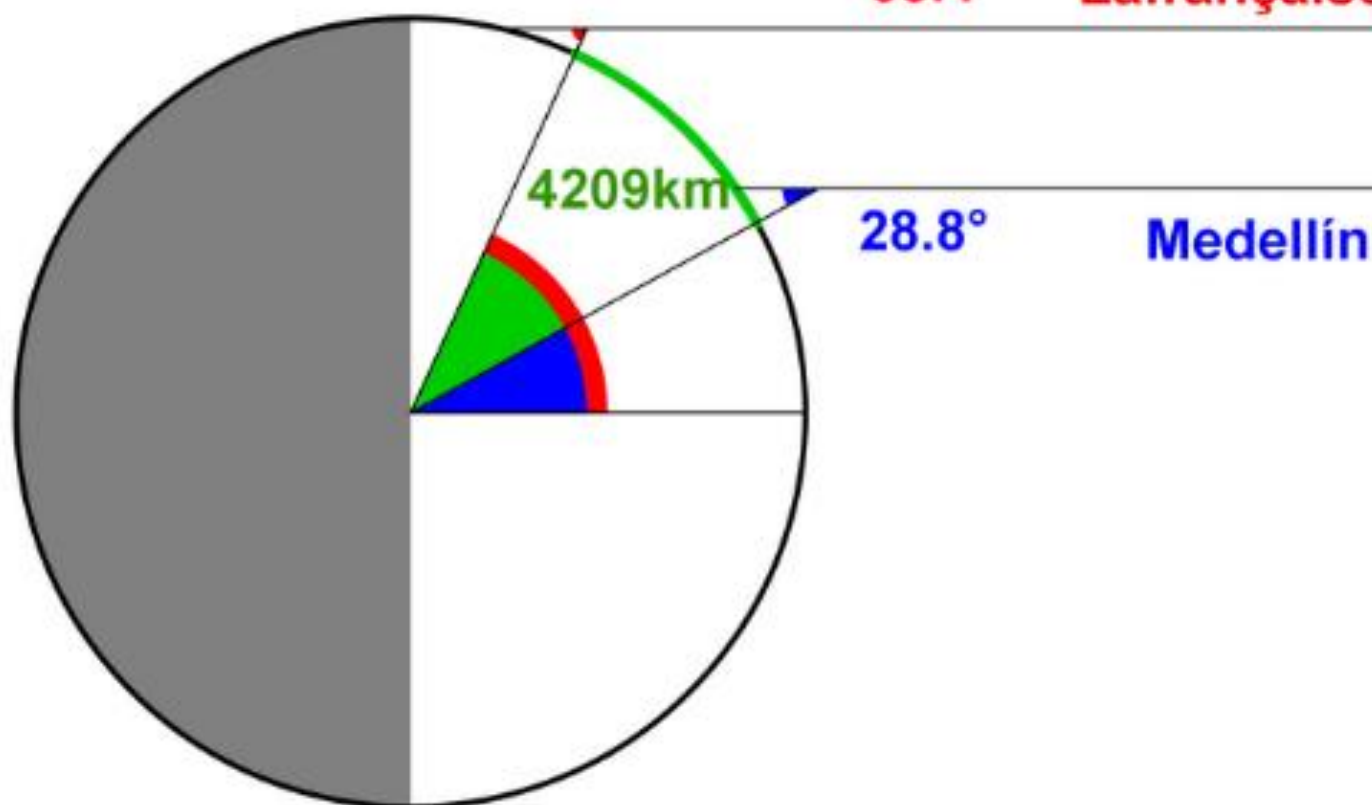
Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Medellín	Colombia	Claustro Comfama	6.240	-75.560

Date	Gnomon	Shadow	Angle
27 November	60.5 cm	33.2 cm	28.2 °

27/11/2017 (Lafrançaise-France) Latitude: 44.127°

27/11/2017 (Medellín-Colombia) Latitude: 6.24°

65.4° Lafrançaise



$$\text{circumference} = \frac{360^\circ \times 4209\text{km}}{65.4^\circ - 28.8^\circ} = 41400 \text{ km}$$



Merlara, Italy

November 2017

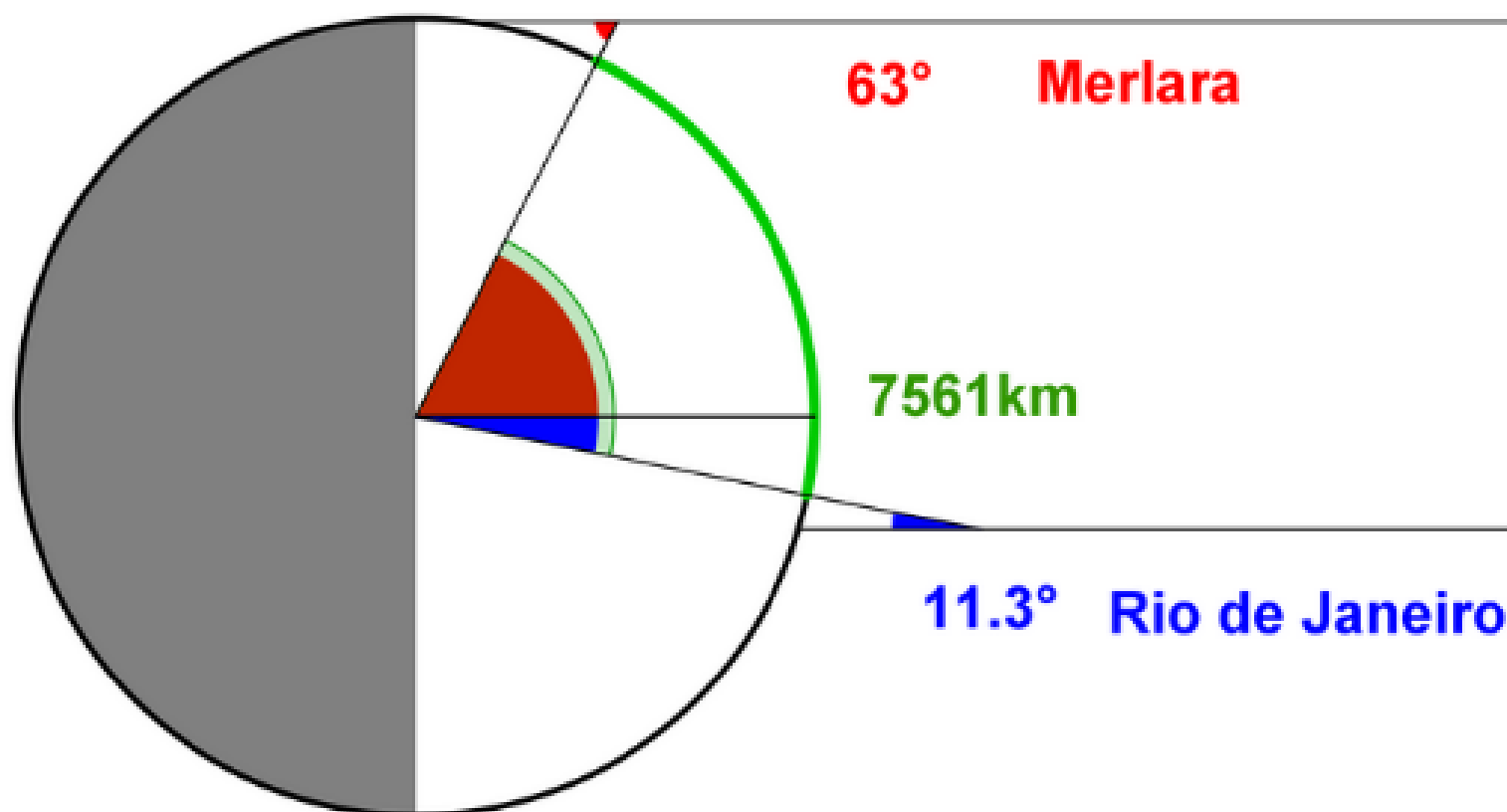


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Merlara	Italy	Lower Secondary School "Dante Alighieri"	45.166	11.433

Date	Gnomon	Shadow	Angle
14 November	100 cm	196 cm	63 °

14/11/2017 (Merlara-Italy) Latitude: 45.166°

14/11/2017 (Rio de Janeiro-Brazil) Latitude: -22.89°




$$\text{circumference} = \frac{360^\circ \times 7561\text{km}}{63^\circ + 11.3^\circ} = 36635 \text{ km}$$



Mohammedia, Tunisia

November 2017



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Mohammedia	Tunisia	Lycée M'hamdia	36.678	10.152

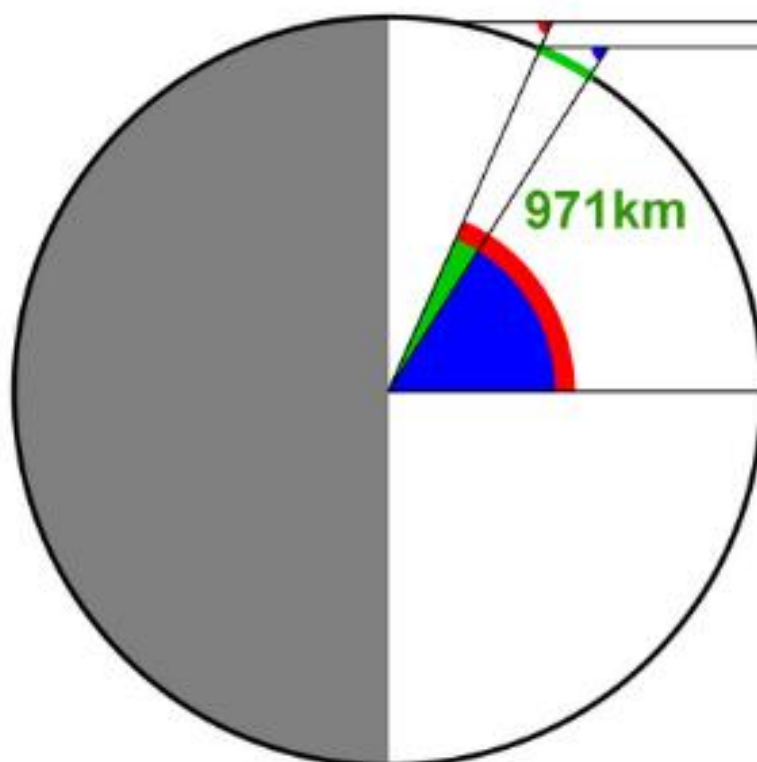
Date	Gnomon	Shadow	Angle
24 November	90 cm	141 cm	57.4 °

24/11/2017 (Busteni-Romania) Latitude: 45.416°

24/11/2017 (Mohammedia-Tunisia) Latitude: 36.678°

66.1° Busteni

57.4° Mohammedia




$$\text{circumference} = \frac{360^\circ \times 971\text{km}}{66.1^\circ - 57.4^\circ} = 40179 \text{ km}$$



Petroupoli, Greece

November 2017



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

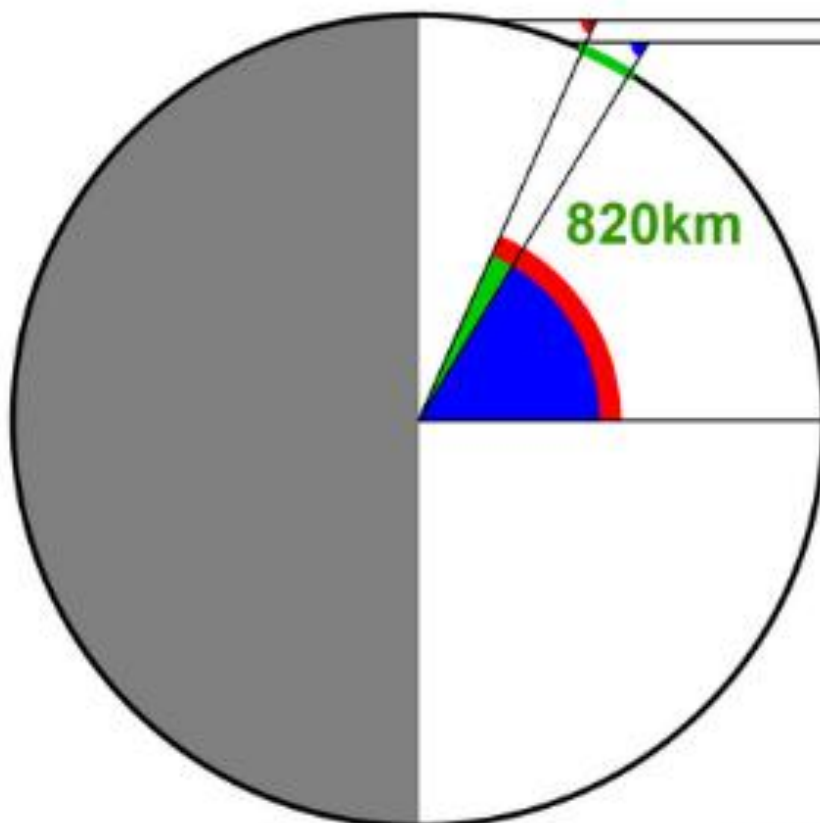
Date	Gnomon	Shadow	Angle
06 November	52.3 cm	72.5 cm	54.2 °
20 November	52.3 cm	82.8 cm	57.7 °
24 November	52.3 cm	86 cm	58.7 °
27 November	52.3 cm	87.5 cm	59.1 °

24/11/2017 (Busteni-Romania) Latitude: 45.416°

24/11/2017 (Petroupoli-Greece) Latitude: 38.036°

66.1° Busteni

58.7° Petroupoli



$$\text{circumference} = \frac{360^\circ \times 820\text{km}}{66.1^\circ - 58.7^\circ} = 39892 \text{ km}$$



Piraeus, Greece

November 2017



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

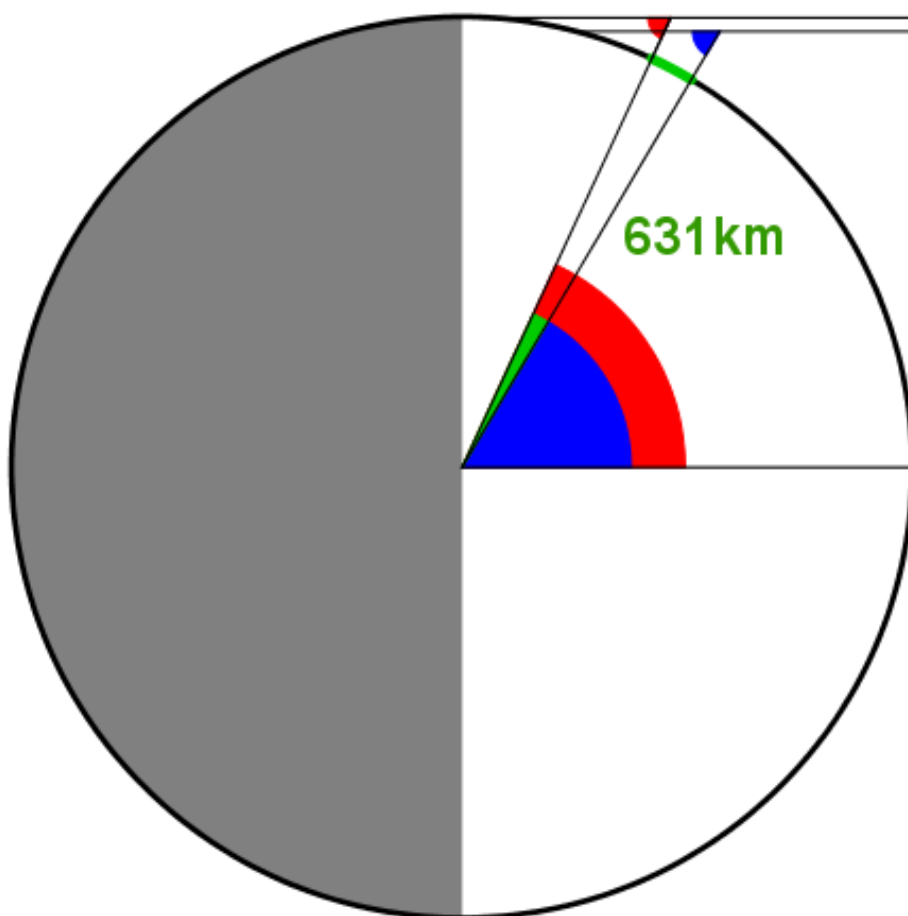
Date	Gnomon	Shadow	Angle
02 November	100 cm	129 cm	52.2 °
09 November	100 cm	143.5 cm	55.1 °
20 November	100 cm	156 cm	57.3 °
24 November	100 cm	162 cm	58.3 °
28 November	100 cm	169 cm	59.4 °

28/11/2017 (Brštanovo-Croatia) Latitude: 43.658°

28/11/2017 (Piraeus-Greece) Latitude: 37.977°

65.1° Brštanovo

59.4° Piraeus



$$\text{circumference} = \frac{360^\circ \times 631 \text{ km}}{65.1^\circ - 59.4^\circ} = 39853 \text{ km}$$



Piranguinho, Brazil

November 2017

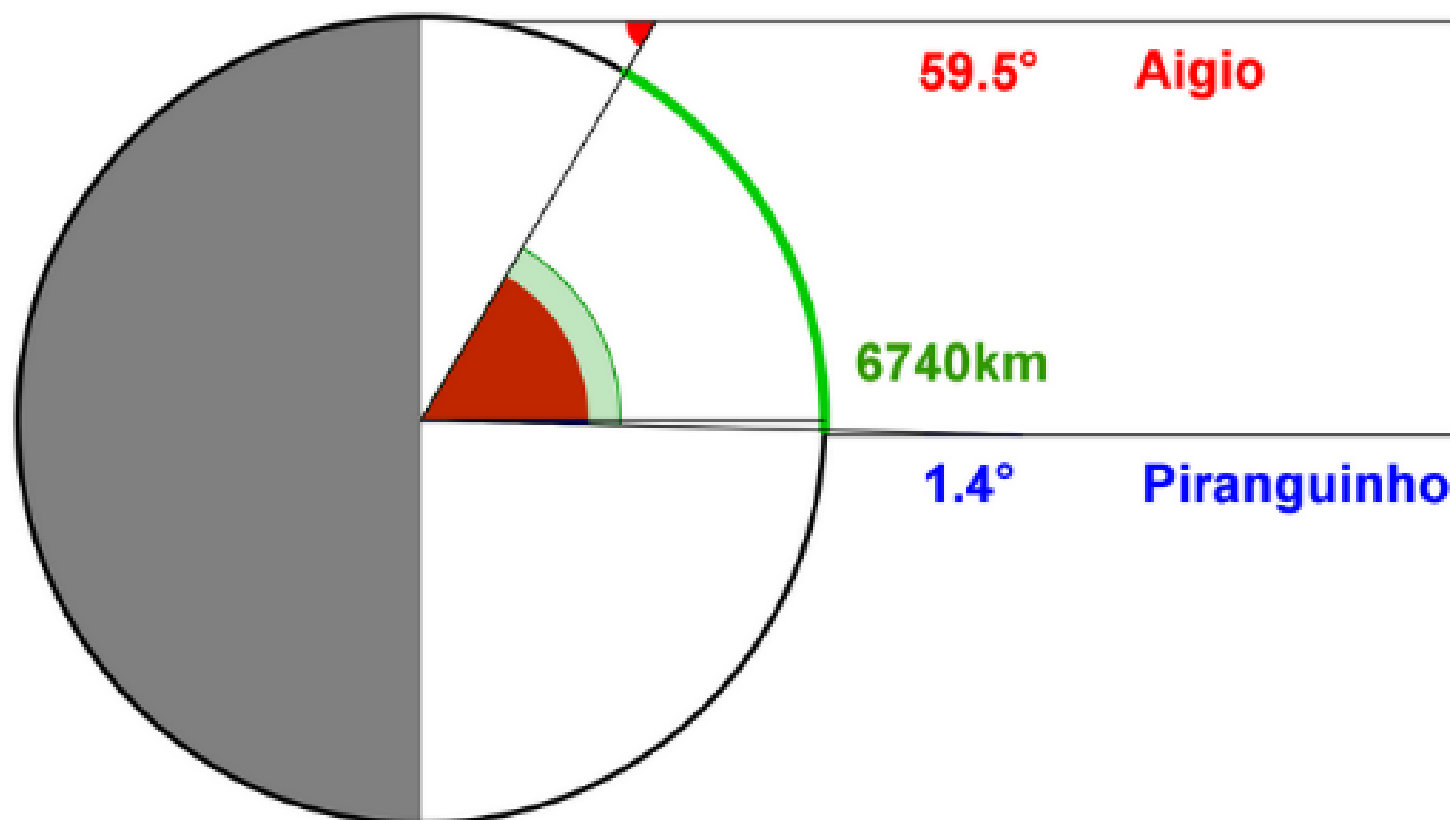


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Piranguinho	Brazil	Universidade Federal de Itajubá	-22.411	-45.535

Date	Gnomon	Shadow	Angle
28 November	70 cm	-1.4 cm	-1.7 °

28/11/2017 (Aigio-Greece) Latitude: 38.252°

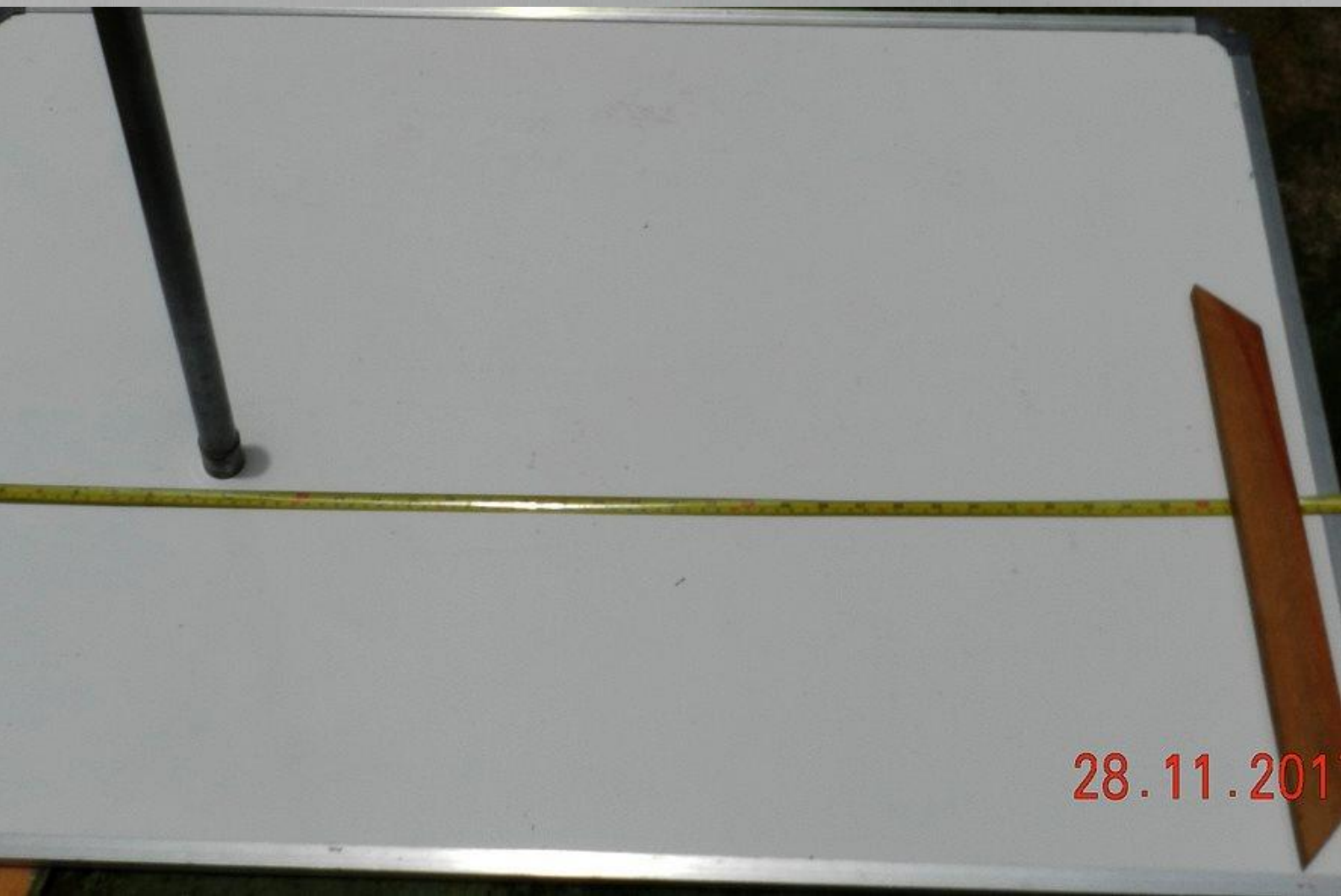
28/11/2017 (Piranguinho-Brazil) Latitude: -22.411°



$$\text{circumference} = \frac{360^\circ \times 6740\text{km}}{59.5^\circ + 1.4^\circ} = 39842 \text{ km}$$



28.11.2017



28.11.2017

Rio Cuarto, Argentina

November 2017

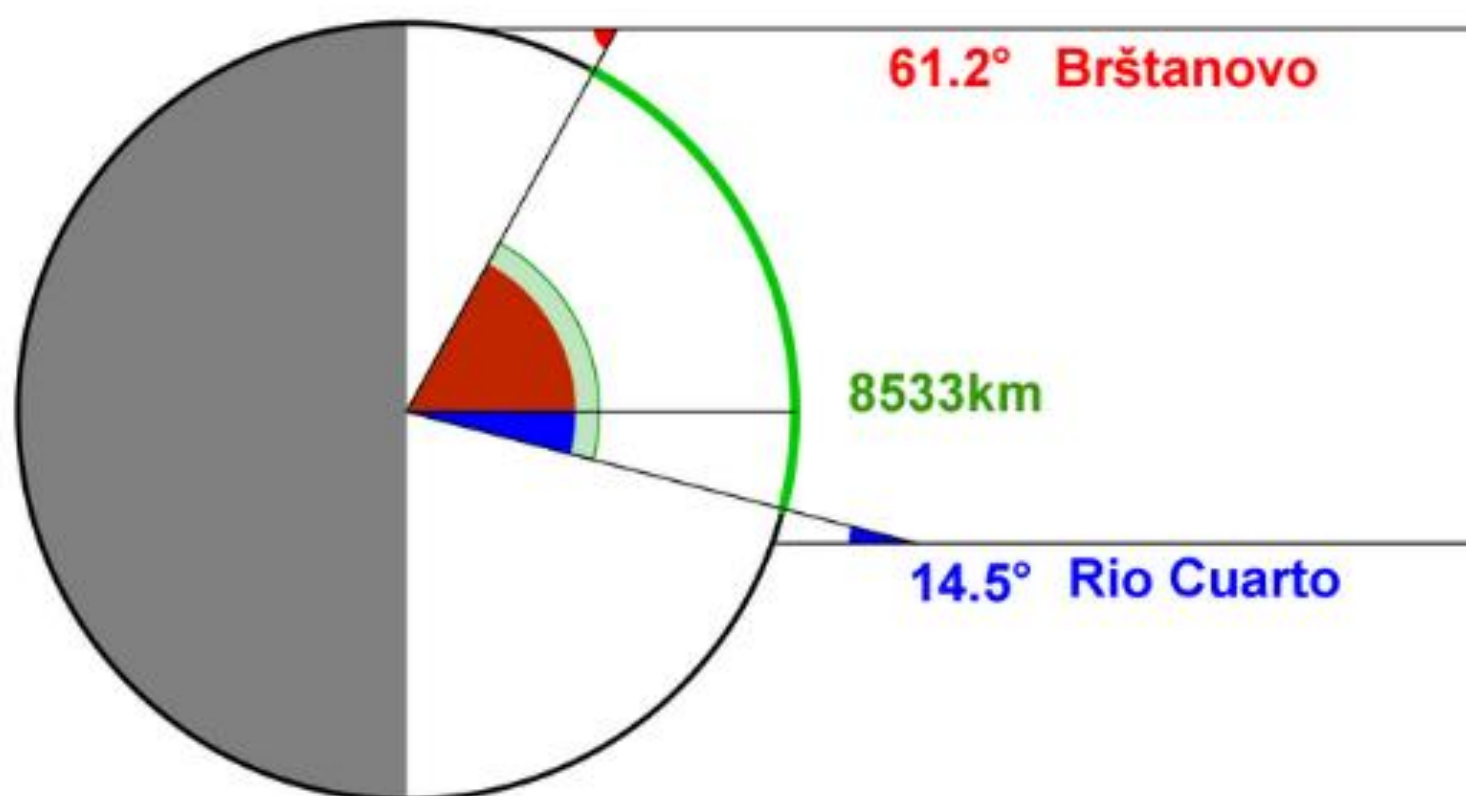


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio Cuarto	Argentina	Colegio Concordia	-33.149	-64.351

Date	Gnomon	Shadow	Angle
10 November	53.5 cm	-25.4 cm	-25.4 °

10/11/2017 (Brštanovo-Croatia) Latitude: 43.658°

10/11/2017 (Rio Cuarto-Argentina) Latitude: -33.149°



$$\text{circumference} = \frac{360^\circ \times 8533\text{km}}{61.2^\circ + 14.5^\circ} = 40580 \text{ km}$$




Colegio
Concordia



Rio de Janeiro CENOM, Brazil

November 2017

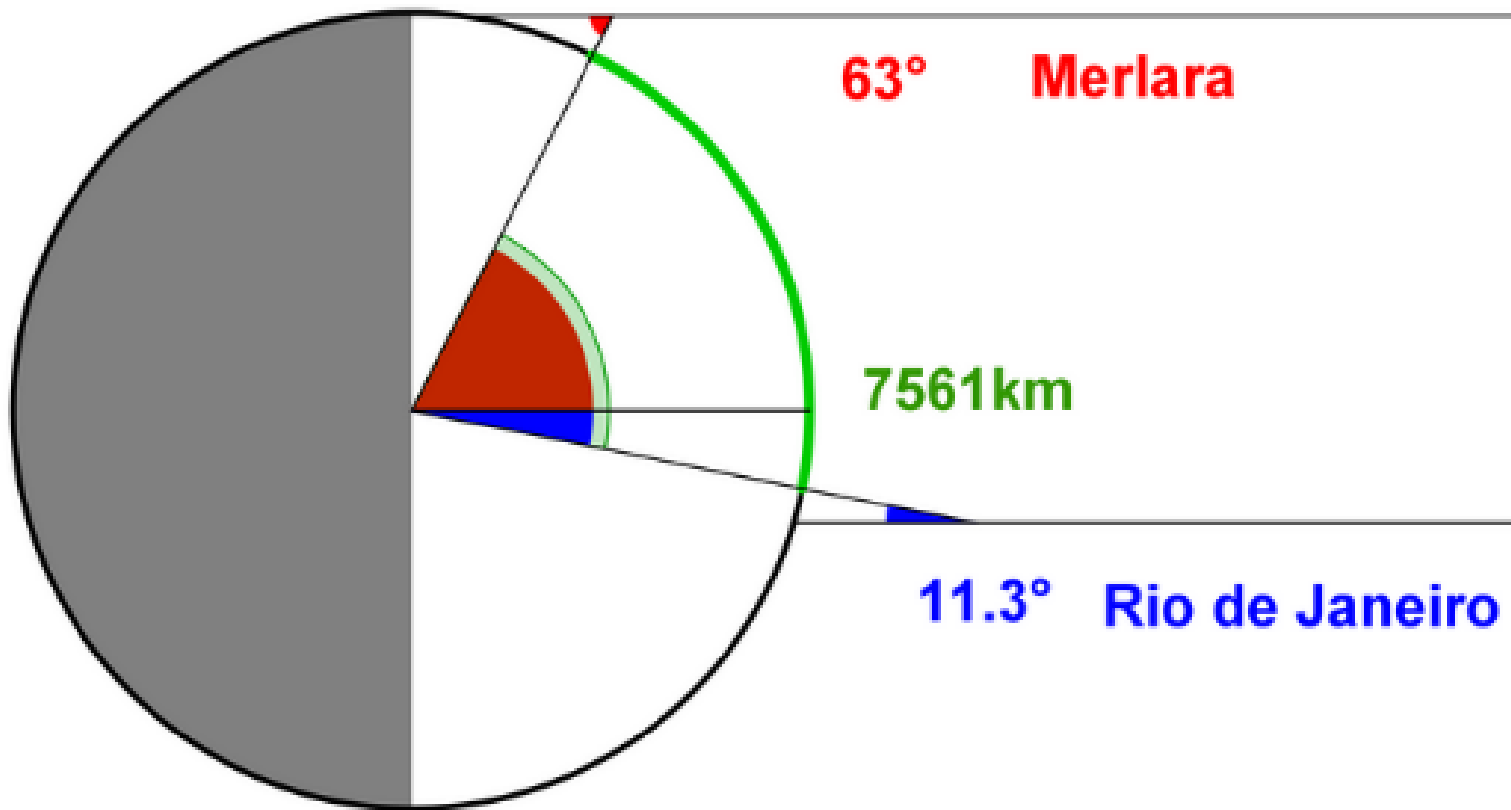


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317

Date	Gnomon	Shadow	Angle
10 November	100 cm	-28 cm	-15.6 °
13 November	100 cm	-26 cm	-14.6 °
14 November	100 cm	-20 cm	-11.3 °
16 November	100 cm	-20 cm	-11.3 °

14/11/2017 (Merlara-Italy) Latitude: 45.166°

14/11/2017 (Rio de Janeiro-Brazil) Latitude: -22.89°




$$\text{circumference} = \frac{360^\circ \times 7561\text{km}}{63^\circ + 11.3^\circ} = 36635 \text{ km}$$



Rio de J. Amanhã, Brazil

November 2017

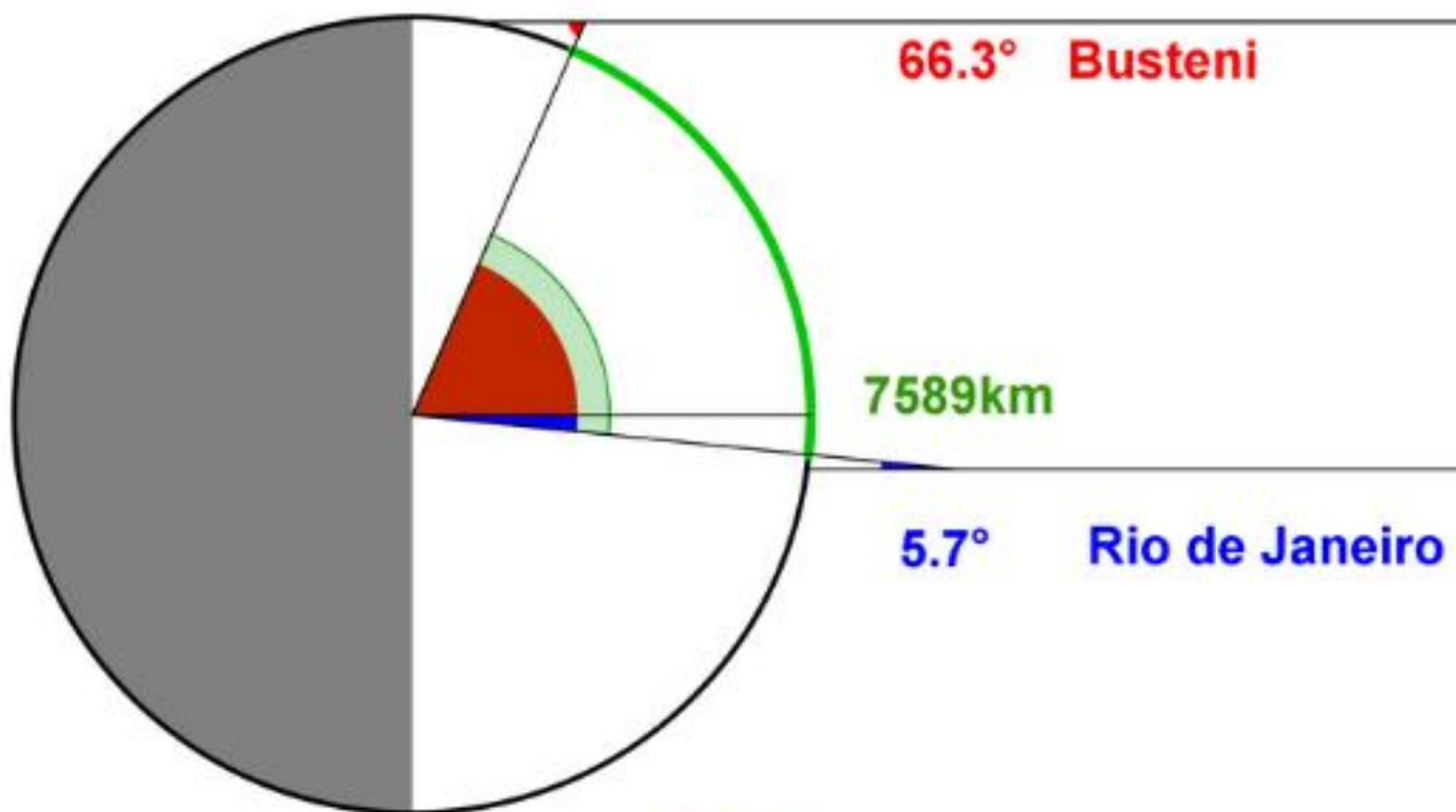


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Museu do Amanhã	-22.895	-43.182

Date	Gnomon	Shadow	Angle
25 November	140 cm	-14 cm	-5.7 °

25/11/2017 (Busteni-Romania) Latitude: 45.416°

25/11/2017 (Rio de Janeiro-Brazil) Latitude: -22.895°




$$\text{circumference} = \frac{360^\circ \times 7589\text{km}}{66.3^\circ + 5.7^\circ} = 37945 \text{ km}$$



San Bernardo, Argentina

November 2017

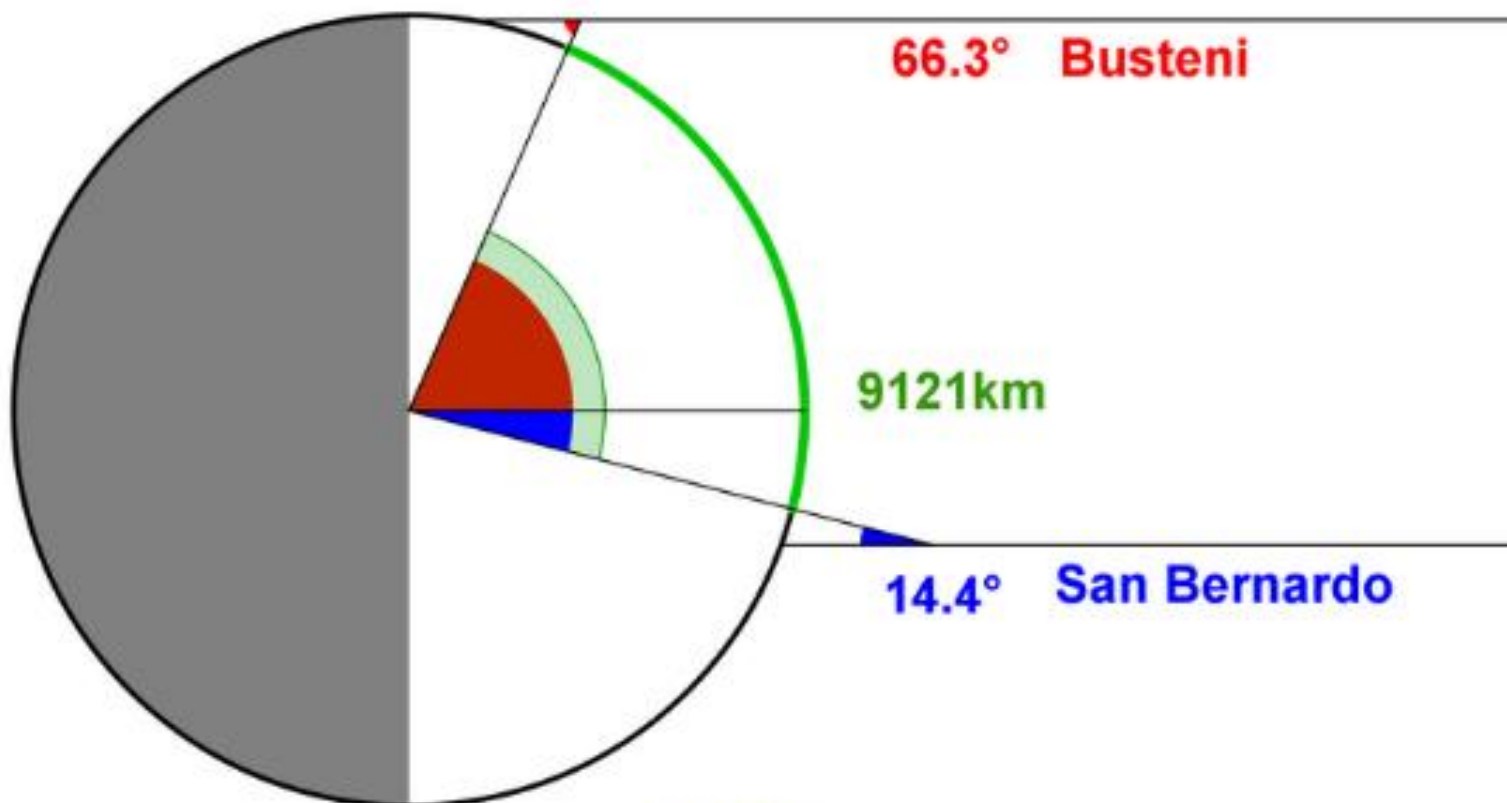


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	San Bernardo	Argentina		-36.684	-56.678

Date	Gnomon	Shadow	Angle
25 November	25 cm	-6.4 cm	-14.4 °

25/11/2017 (Busteni-Romania) Latitude: 45.416°

25/11/2017 (San Bernardo-Argentina) Latitude: -36.684°



$$\text{circumference} = \frac{360^\circ \times 9121\text{km}}{66.3^\circ + 14.4^\circ} = 40688 \text{ km}$$



