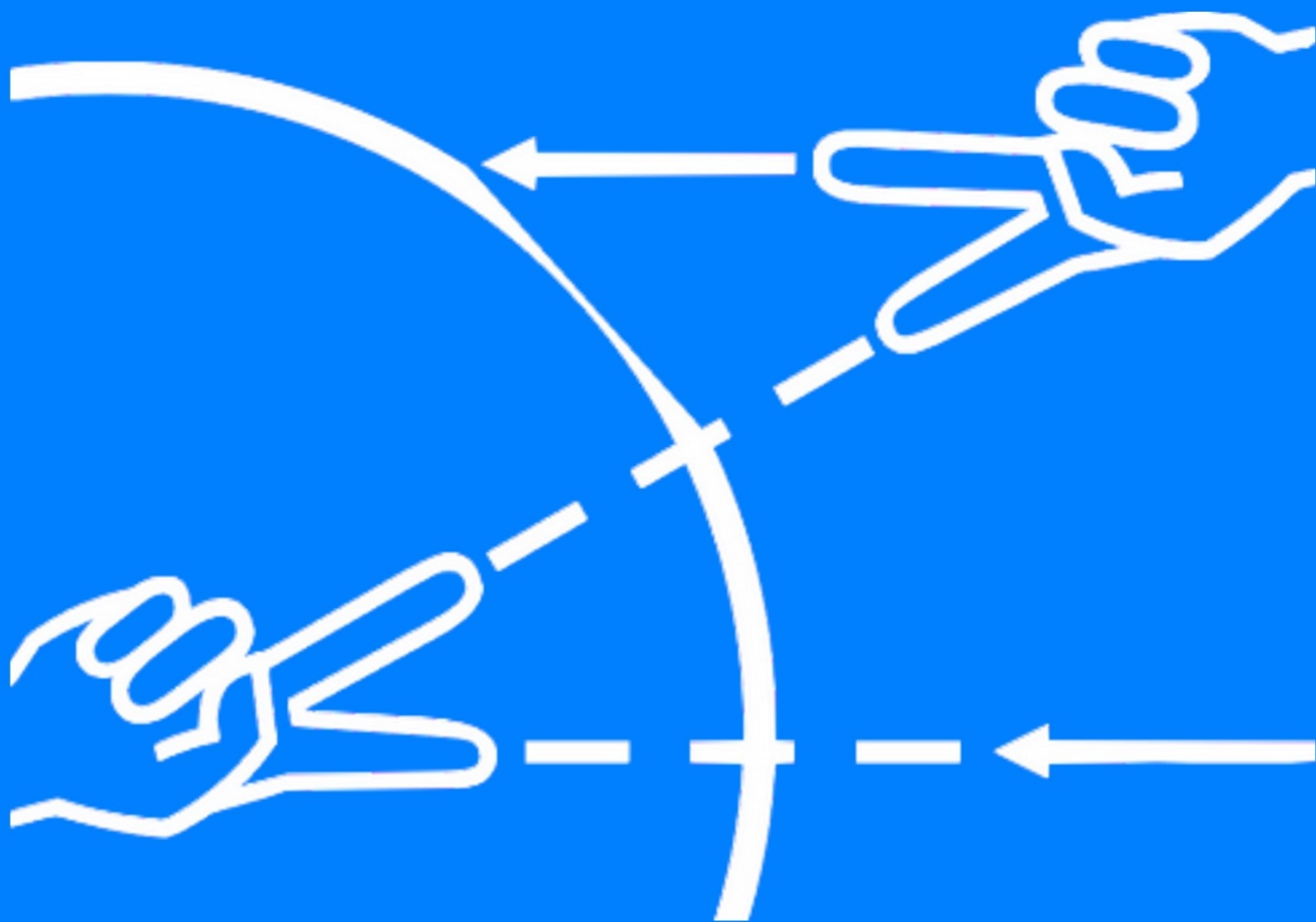


Eratosthenes



4 Continents

11 Countries

22 Schools

120 Measures

4 Continents

11 Countries

22 Schools

120 Measures

E u r o p e (6)

Greece

Aigio – Ilion - Athens

France

Lafrançaise

Romania

Busteni

Spain

Úbeda

A m e r i c a (1 2)

Brazil

Rio de Janeiro CENOM - Pelotas

Rio de Janeiro Méier - Santarém

Argentina

Alta Gracia – Chivilcoy - Rio Cuarto - Buenos Aires

Puerto Rico

Bayamón

Colombia

Guarne - Yarumal - Medellín

A s i a (2)

Jordan

Irbid

India

Dholpur Dhanora

A f r i c a (2)


Tunisia

Bizerte - 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
	Athens	Greece	Experimental College Agion Anargyron	38.027	23.726
	Bayamón	Puerto Rico	AECM Carribean University	18.383	-66.168
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868
	Buenos Aires	Argentina	Escuela 24 DE 20	-34.675	-58.483
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535
	Chivilcoy	Argentina	Parque Cielos del Sur	-34.911	-60.014
	Dholpur Dhanora	India	Mahatma Gandhi Govt School	26.658	77.677
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-76.522
	Ilion	Greece	11th JuniorHigh School of Ilion	38.033	23.697
	Irbid	Jordan	Mashar'eh Military School	32.405	35.588
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237
	Medellín	Colombia	Grupo Astrofánaticos	6.231	-75.591
	Méier	Brazil	Escola Municipal Bento Ribeiro	-22.904	-43.280
	Mohammedia	Tunisia	Lycée M'hamdia	36.678	10.152
	Pelotas	Brazil	Federal University of Pelotas	-31.772	-52.329
	Rio Cuarto	Argentina	Colegio Concordia	-33.149	-64.351
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317
	Santarém	Brazil	Santarém Adventist College	-2.439	-54.699
	Úbeda	Spain	Colegio Salesiano Santo Domingo Savio	38.017	-3.367
	Yarumal	Colombia	Institución Educativa San Luis	6.966	-75.416

Aigio, Greece

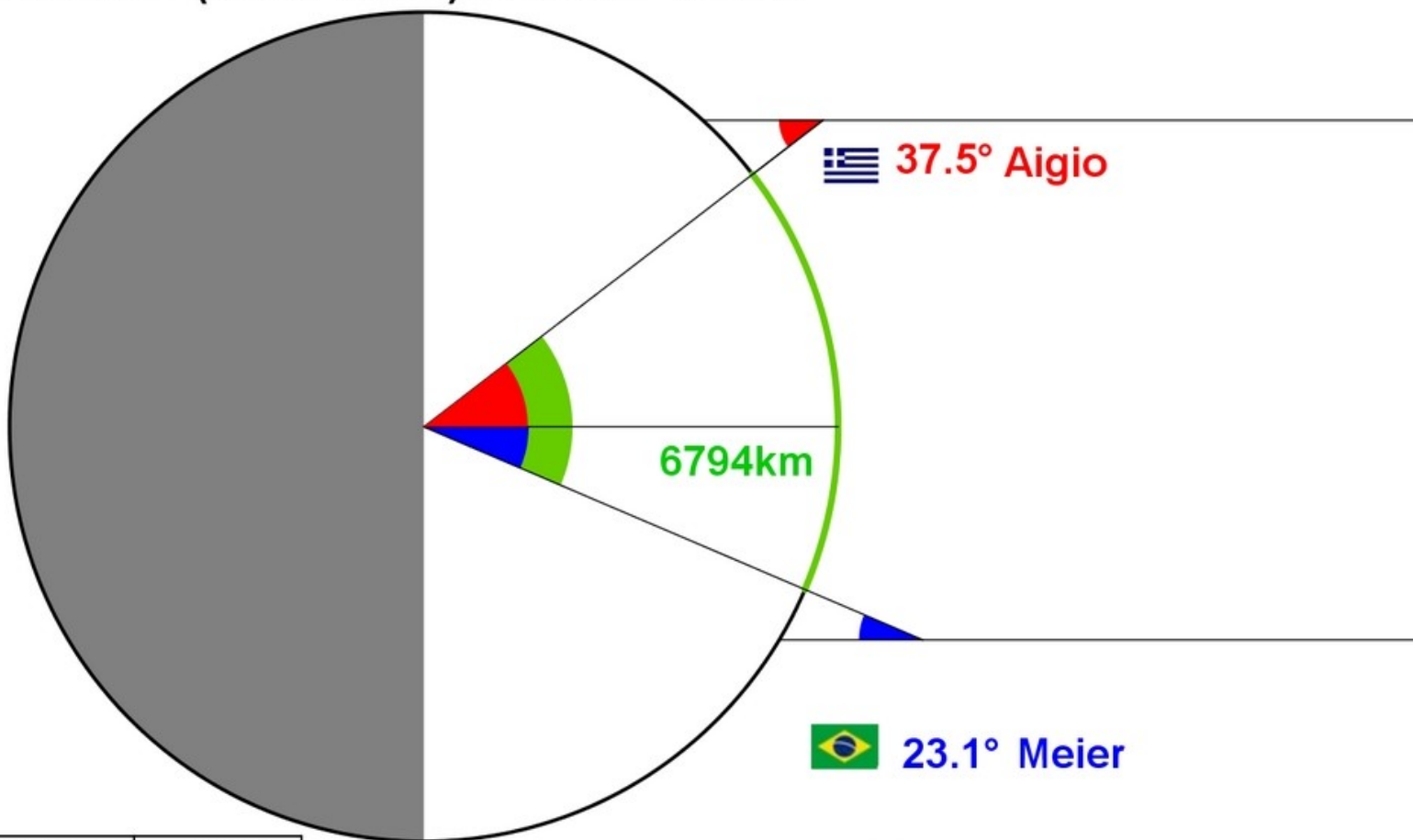


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079

Date	Gnomon	Shadow	Angle
04 September 2021	17.0cm	10.5cm	31.7°
22 September 2021	30cm	23cm	37.5°

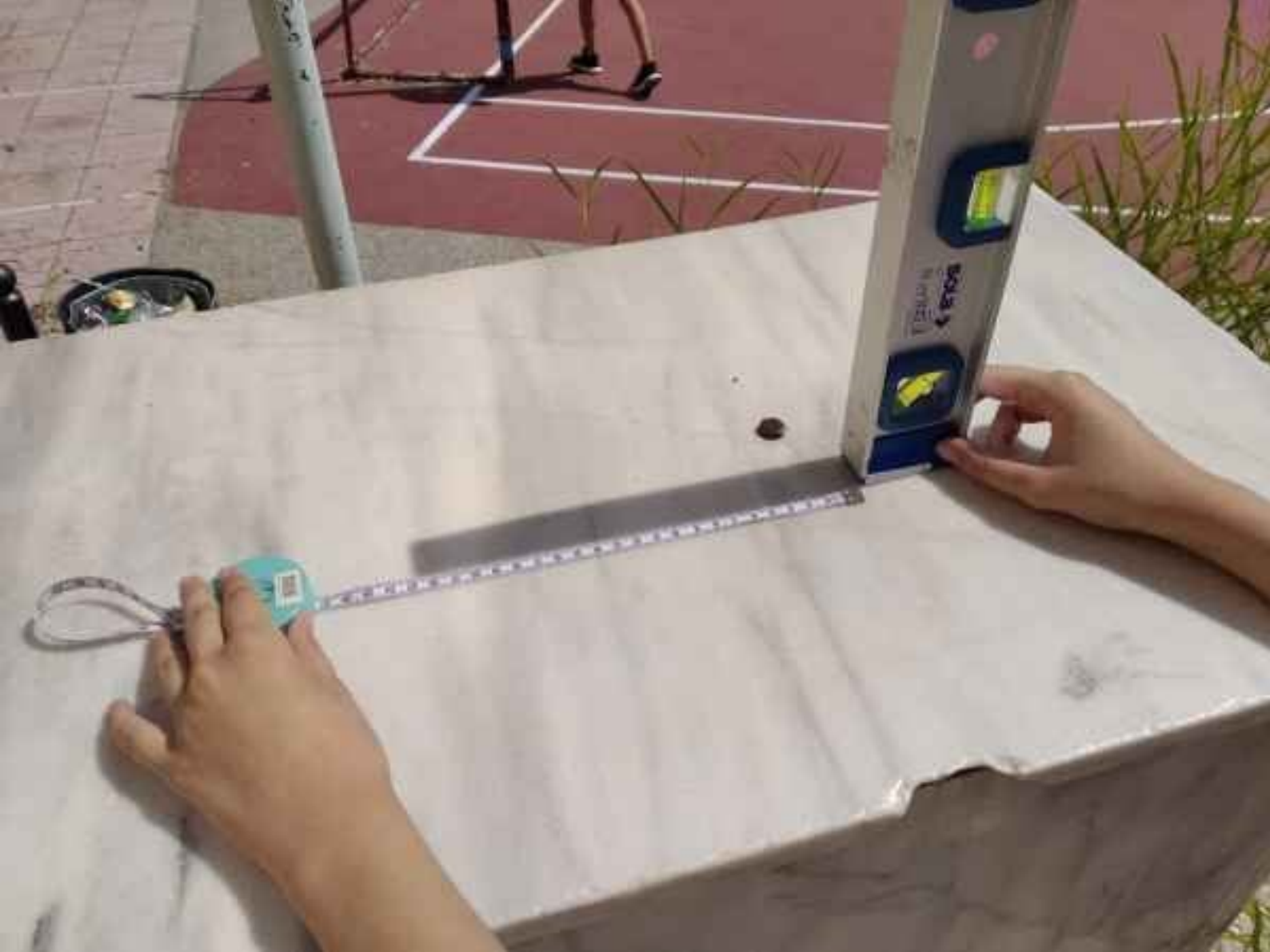
22/09/2021 (Aigio-Greece) Latitude: 38.252°

22/09/2021 (Meier-Brazil) Latitude: -22.904°



$$\text{circumference} = \frac{360^\circ \times 6794\text{km}}{37.5^\circ + 23.1^\circ} = 40360 \text{ km}$$

Distance	Angle
circumference	360°
6794km	37.5° + 23.1°



Alta Gracia, Argentina

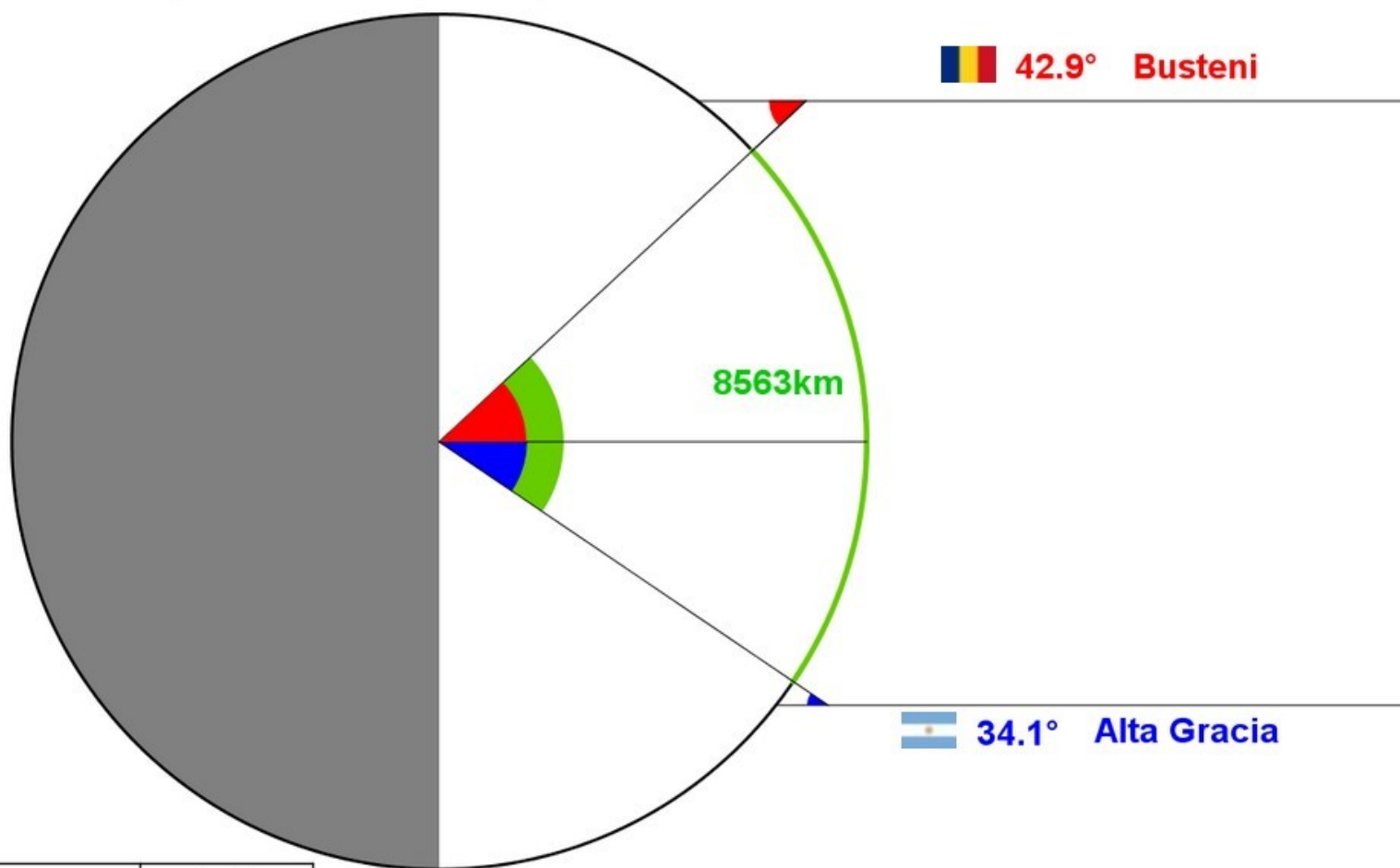


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Alta Gracia	Argentina	Fundación Caminos de Anisacate	-31.659	-64.417

Date	Gnomon	Shadow	Angle
01 September 2021	17.5cm	-14.3cm	-39.3°
05 September 2021	17.5cm	-13.5cm	-37.6°
06 September 2021	17.5cm	-13.1cm	-36.8°
08 September 2021	17.5cm	-12.8cm	-36.2°
10 September 2021	17.5cm	-12.7cm	-36.0°
13 September 2021	18.0cm	-12.3cm	-34.3°
15 September 2021	13.0cm	-8.8cm	-34.1°
16 September 2021	13.0cm	-8.8cm	-34.1°
17 September 2021	13.0cm	-8.6cm	-33.5°
22 September 2021	13.0cm	-8.0cm	-31.6°
27 September 2021	13cm	-7.1cm	-28.6°

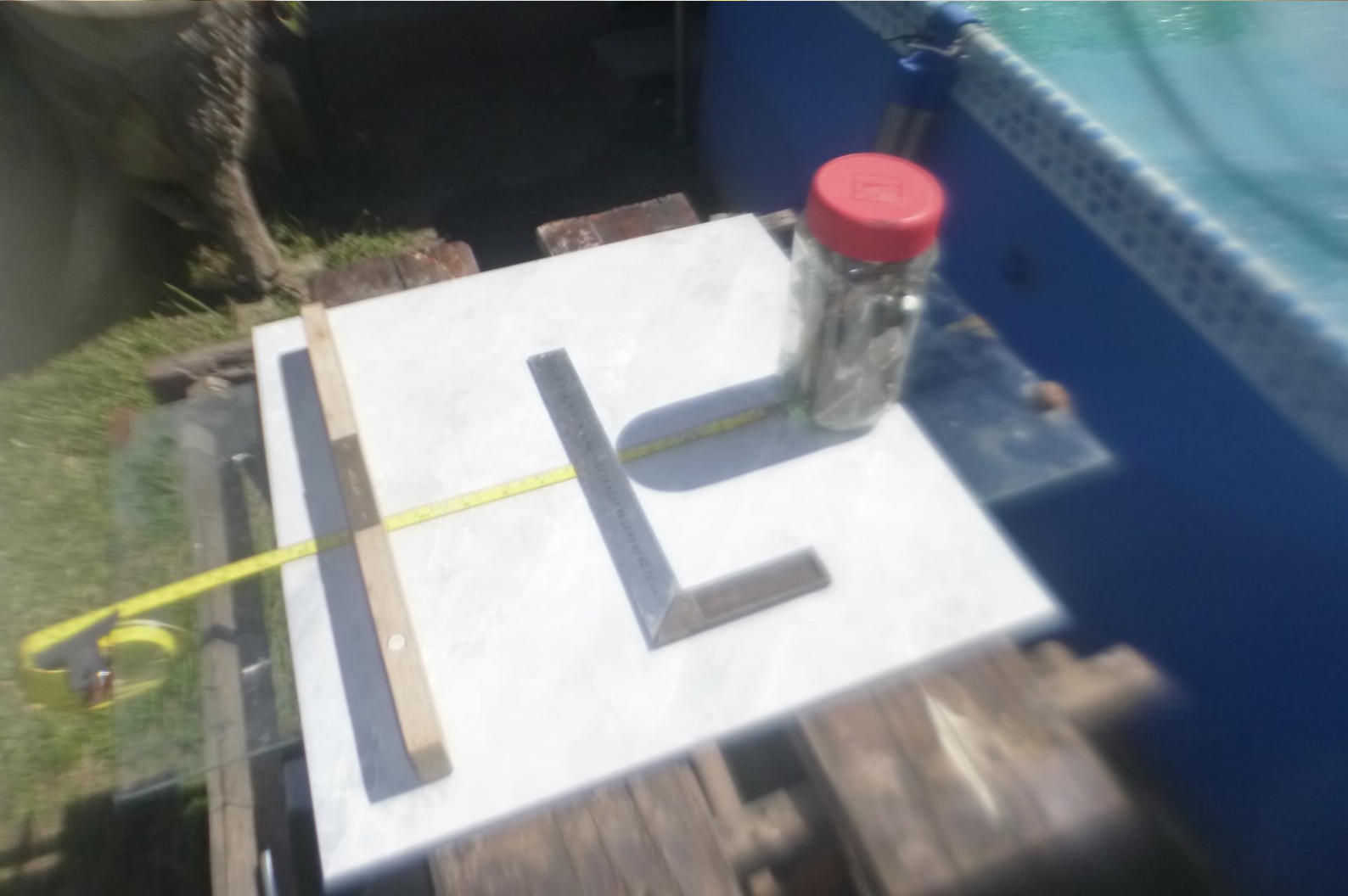
16/09/2021 (Busteni-Romania) Latitude: 45.416°

16/09/2021 (Alta Gracia-Argentina) Latitude: -31.656°



Distance	Angle
circumference	360°
8563km	42.9° + 34.1°

$$\text{circumference} = \frac{360^\circ \times 8563\text{km}}{42.9^\circ + 34.1^\circ} = 40035 \text{ km}$$



Athens, Greece

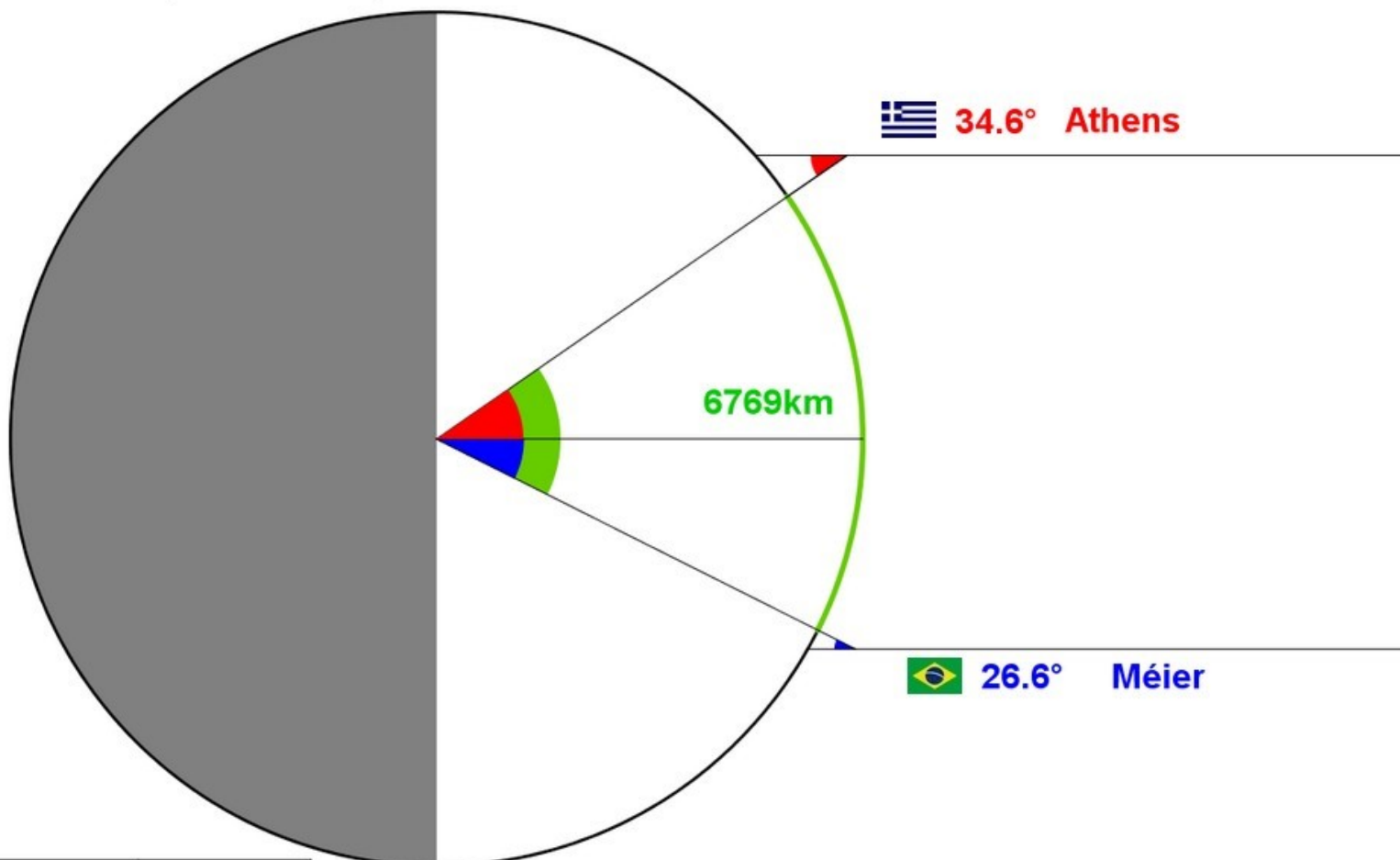


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Athens	Greece	Experimental College Agion Anargyron	38.027	23.726

Date	Gnomon	Shadow	Angle
14 September 2021	49.0cm	33.8cm	34.6°

14/09/2021 (Athens-Greece) Latitude: 38.027°

14/09/2021 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
6769km	34.6° + 26.6°

$$\text{circumference} = \frac{360^\circ \times 6769\text{km}}{34.6^\circ + 26.6^\circ} = 39818 \text{ km}$$



Bayamón, Puerto Rico

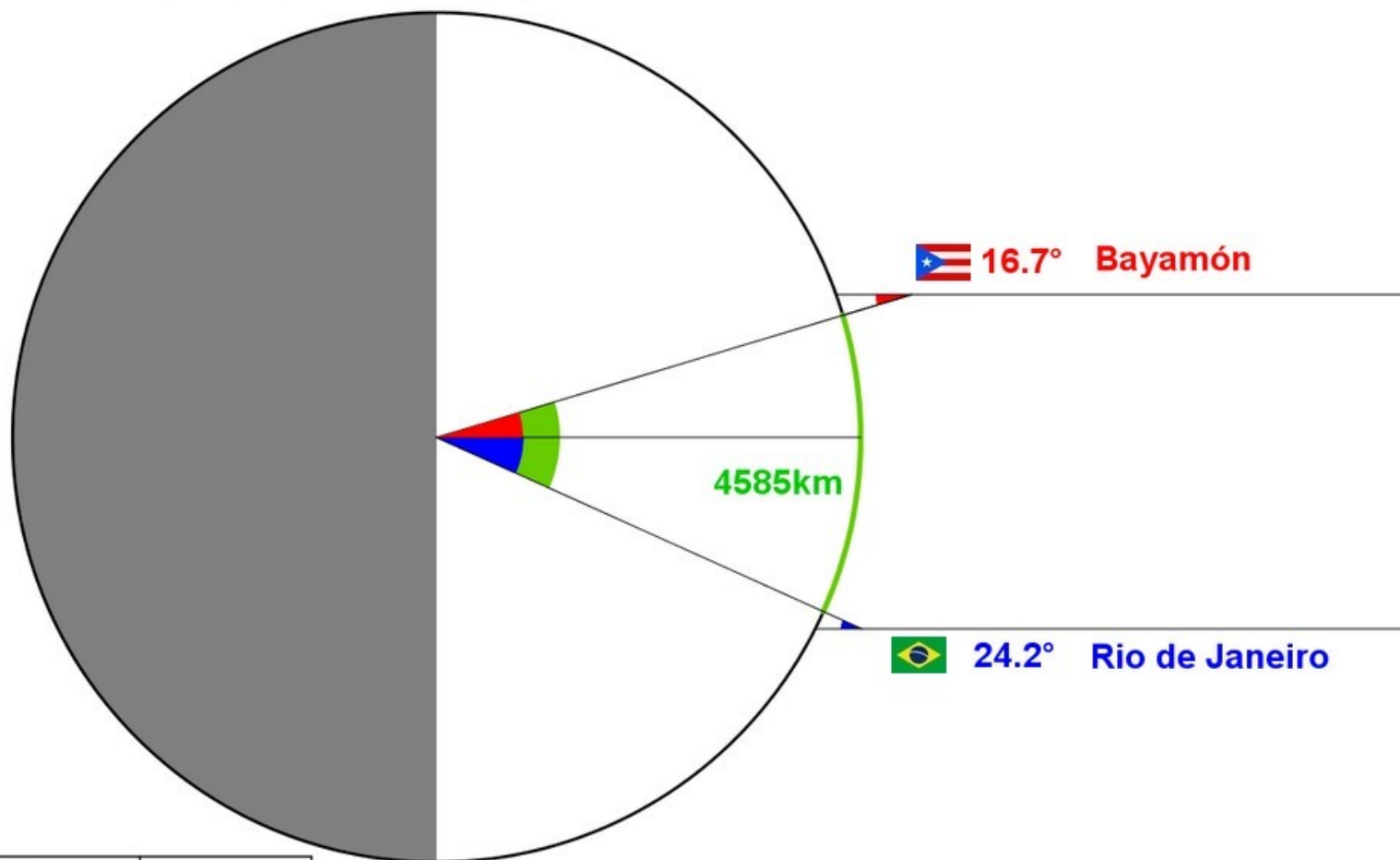


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Bayamón	Puerto Rico	AECM Carribean University	18.383	-66.168

Date	Gnomon	Shadow	Angle
20 September 2021	25.0cm	8.2cm	18.2°
22 September 2021	25.0cm	7.5cm	16.7°

22/09/2021 (Bayamón-Puerto Rico) Latitude: 18.383°

21/09/2021 (Rio de Janeiro-Brazil) Latitude: -22.89°




Distance	Angle
circumference	360°
4585km	16.7° + 24.2°

$$\text{circumference} = \frac{360^\circ \times 4585\text{km}}{16.7^\circ + 24.2^\circ} = 40357 \text{ km}$$



Bizerte, Tunisia

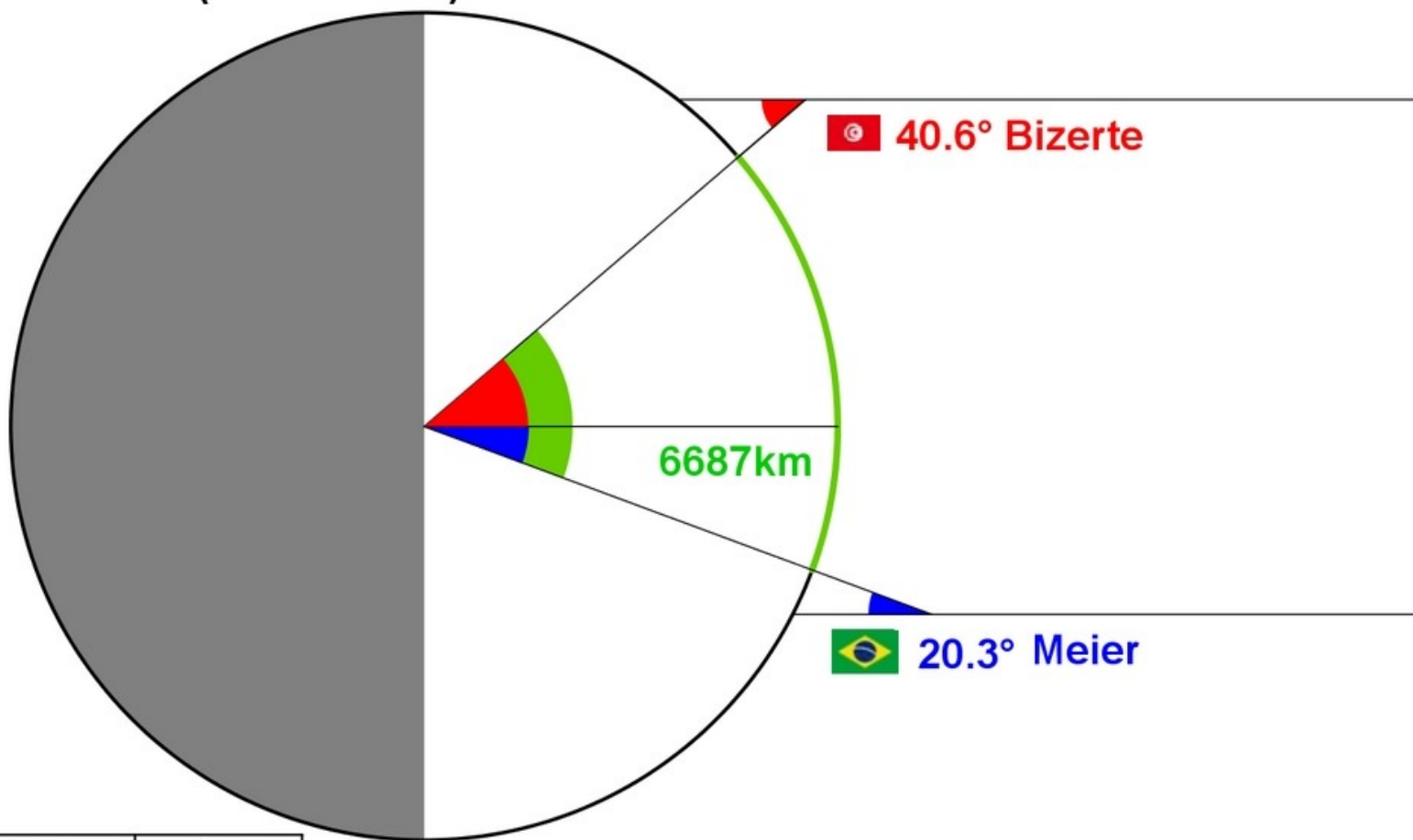


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868

Date	Gnomon	Shadow	Angle
22 September 2021	49cm	39.3cm	38.7°
24 September 2021	49.0cm	40.0cm	39.2°
29 September 2021	49.0cm	42.0cm	40.6°

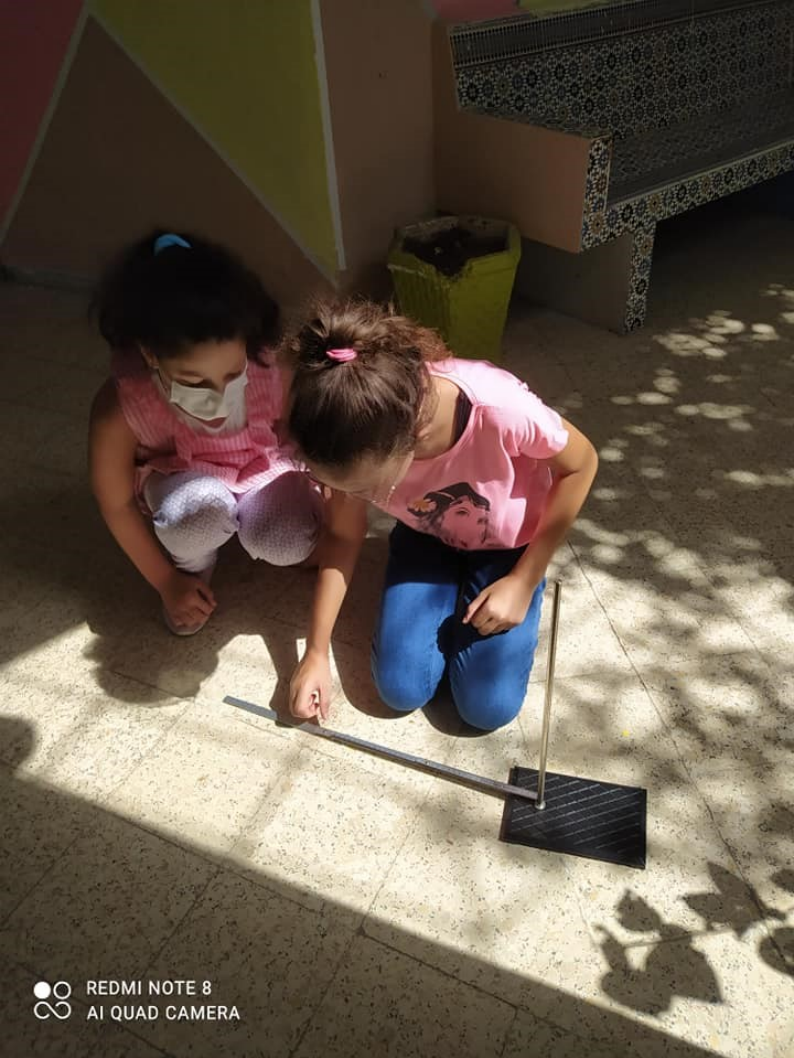
29/09/2021 (Bizerte-Tunisia) Latitude: 37.284°

29/09/2021 (Meier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
6687km	40.6° + 20.3°

$$\text{circumference} = \frac{360^\circ \times 6687\text{km}}{40.6^\circ + 20.3^\circ} = 39529 \text{ km}$$



Buenos Aires, Argentina

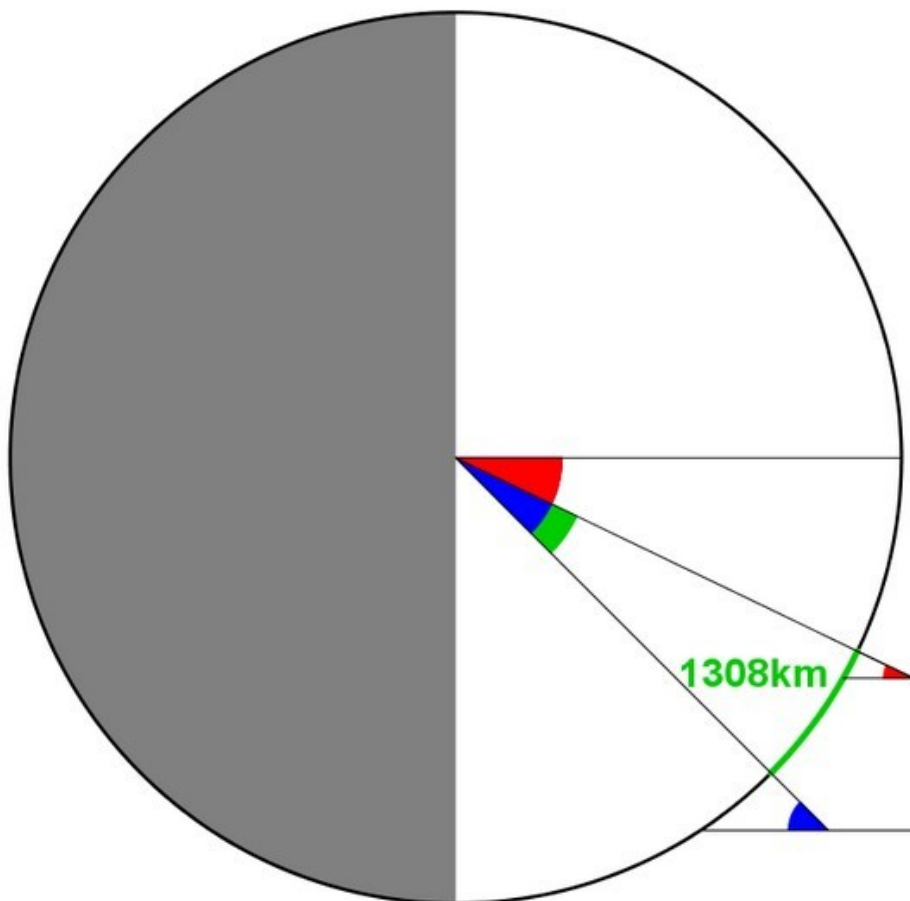


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Buenos Aires	Argentina	Escuela 24 DE 20	-34.675	-58.483

Date	Gnomon	Shadow	Angle
26 September 2021	6cm	-6cm	-45°

26/09/2021 (Meier-Brazil) Latitude: -22.904°

26/09/2021 (Buenos Aires-Argentina) Latitude: -34.675°

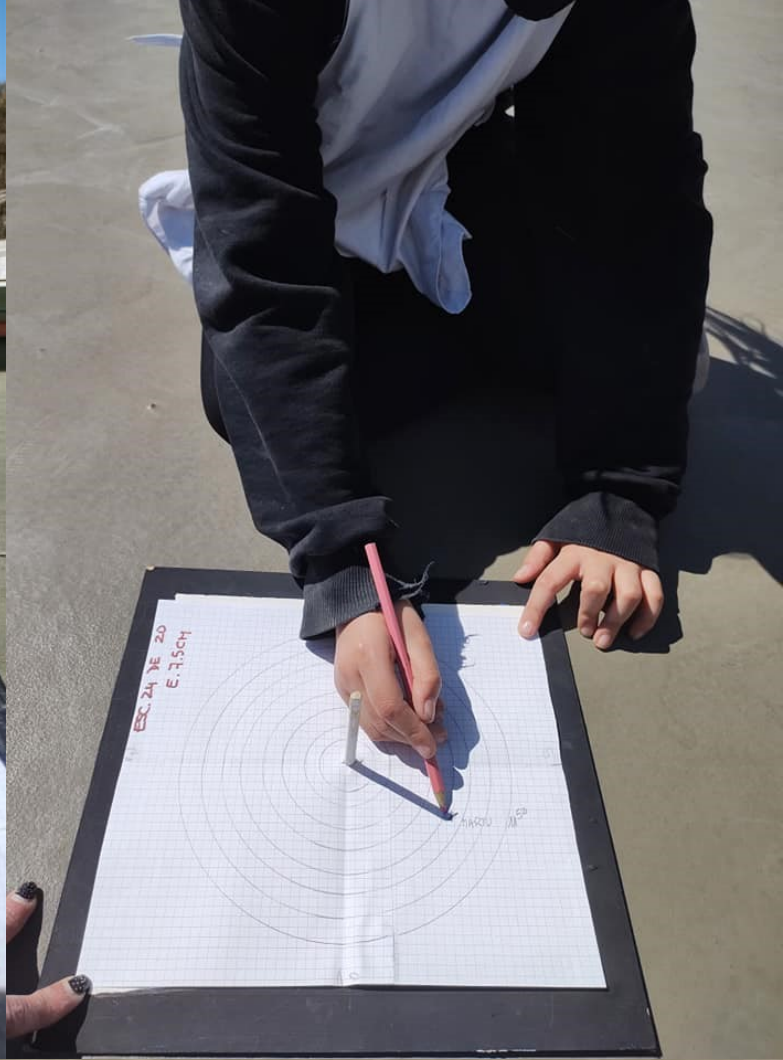


25.7° Meier

45° Buenos Aires

Distance	Angle
circumference	360°
1308km	45° - 25.7°

circumference = $\frac{360^\circ \times 1308\text{km}}{45^\circ - 25.7^\circ} = 24398 \text{ km}$



Busteni, Romania

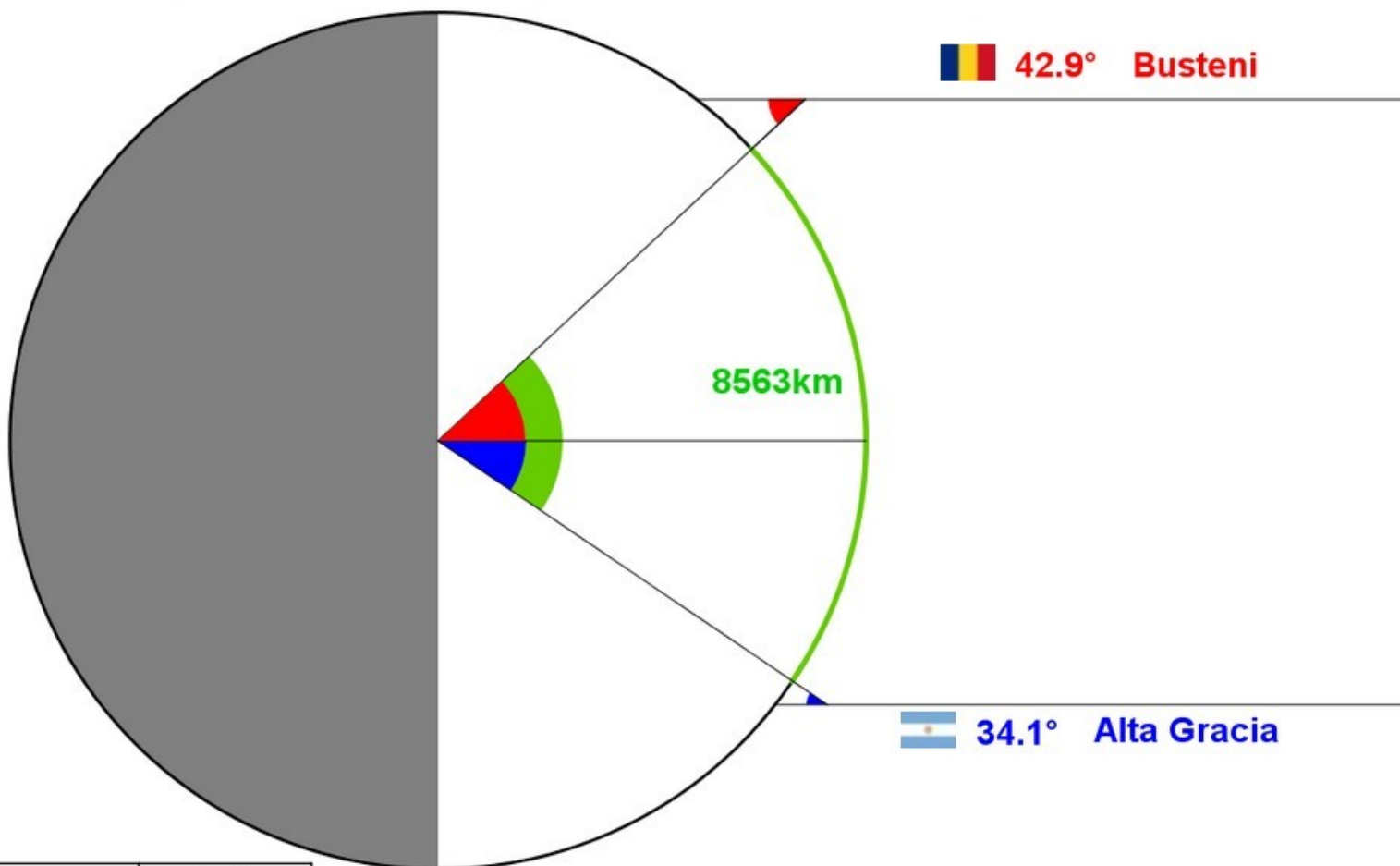


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535

Date	Gnomon	Shadow	Angle
16 September 2021	50.0cm	46.4cm	42.9°
20 September 2021	30.5cm	30.0cm	44.5°
21 September 2021	70.0cm	69.7cm	44.9°
22 September 2021	29.7cm	30cm	45.3°
24 September 2021	38.5cm	40.0cm	46.1°
27 September 2021	50cm	54.2cm	47.3°
30 September 2021	51.3cm	58cm	48.5°

16/09/2021 (Busteni-Romania) Latitude: 45.416°

16/09/2021 (Alta Gracia-Argentina) Latitude: -31.656°

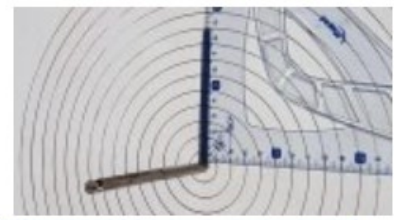



Distance	Angle
circumference	360°
8563km	42.9° + 34.1°

$$\text{circumference} = \frac{360^\circ \times 8563\text{km}}{42.9^\circ + 34.1^\circ} = 40035 \text{ km}$$



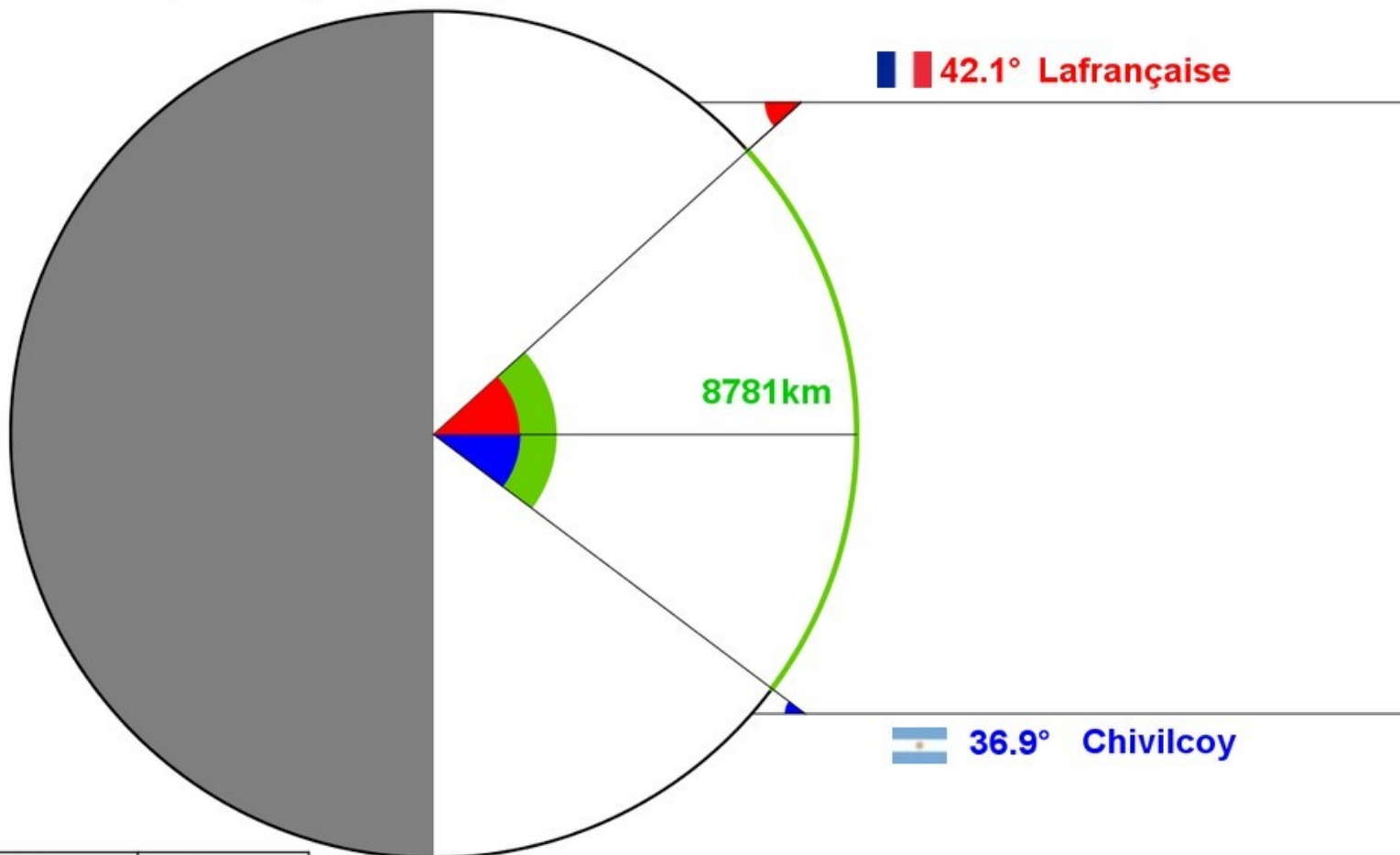
Chivilcoy, Argentina



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Chivilcoy	Argentina	Parque Cielos del Sur	-34.911	-60.014

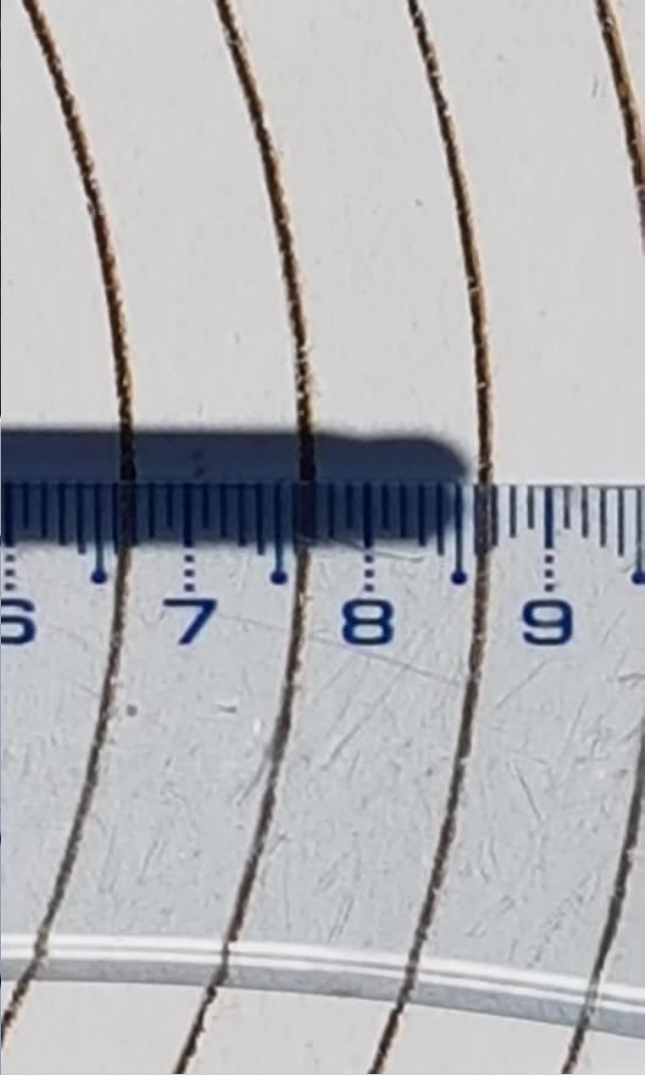
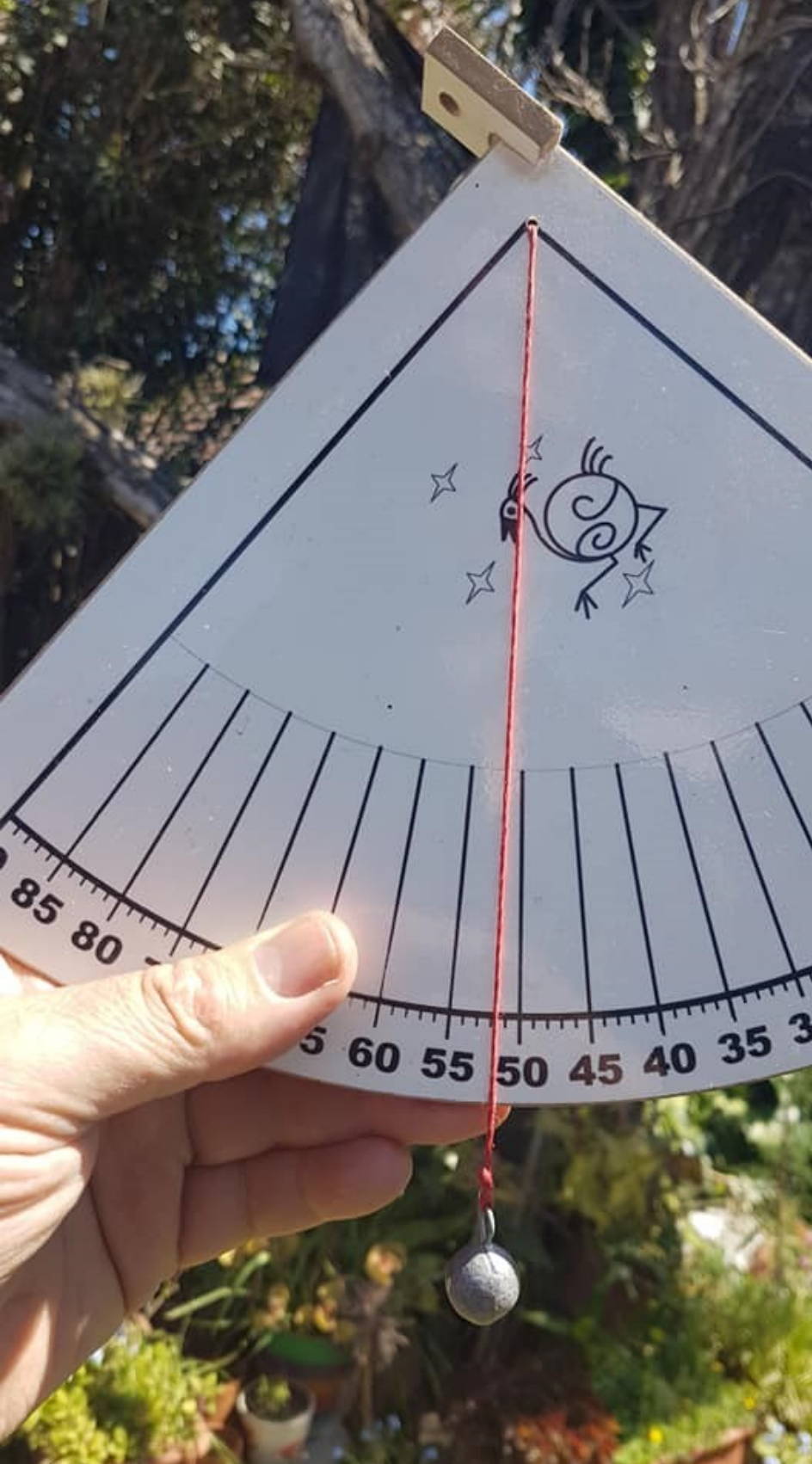
Date	Gnomon	Shadow	Angle
14 September 2021	12cm	-9.4cm	-37.9°
16 September 2021	12.0cm	-9.1cm	-37.2°
17 September 2021	12.0cm	-9.0cm	-36.9°
21 September 2021	12.0cm	-8.5cm	-35.3°
24 September 2021	12.1cm	-8.2cm	-34.1°

17/09/2021 (Lafrançaise-France) Latitude: 44.127°
 17/09/2021 (Chivilcoy-Argentina) Latitude: -34.911°



Distance	Angle
circumference	360°
8781km	42.1° + 36.9°

$$\text{circumference} = \frac{360^\circ \times 8781\text{km}}{42.1^\circ + 36.9^\circ} = 40015 \text{ km}$$



Dholpur Dhanora, India

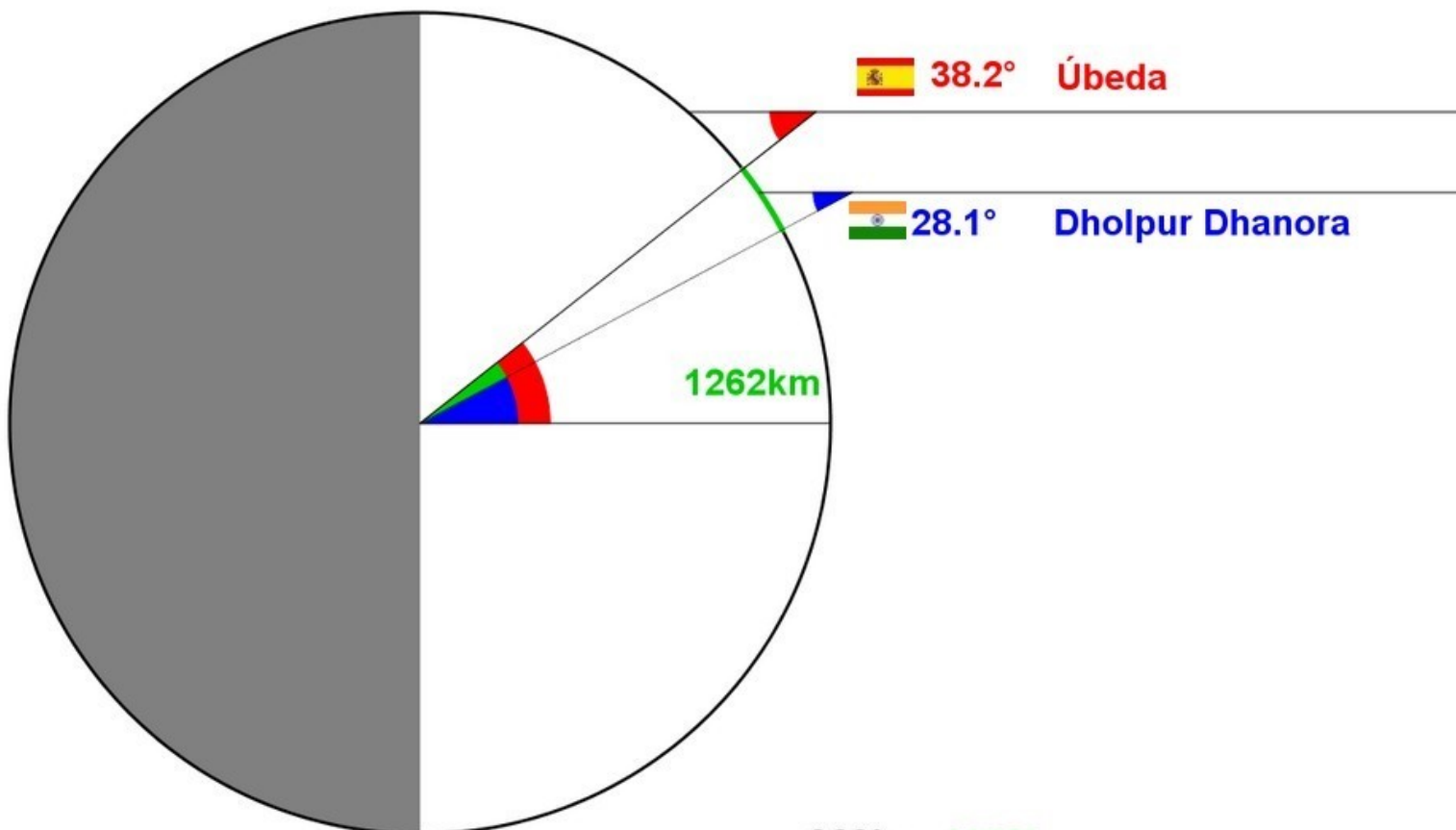


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Dholpur Dhanora	India	Mahatma Gandhi Govt School	26.658	77.677

Date	Gnomon	Shadow	Angle
23 September 2021	58cm	31cm	28.1°

23/09/2021 (Úbeda-Spain) Latitude: 38.017°

23/09/2021 (Dholpur Dhanora-India) Latitude: 26.658°



Distance	Angle
circumference	360°
1262km	38.2° - 28.1°

$$\text{circumference} = \frac{360^\circ \times 1262\text{km}}{38.2^\circ - 28.1^\circ} = 44982 \text{ km}$$

**MAHATMA GANDHI GOVT. SCHOOL
DHANORA (BARI) DHOLPUR**



**MAHATMA GANDHI GOVT. SCHOOL
DHANORA (BARI) DHOLPUR**



Guarne, Colombia

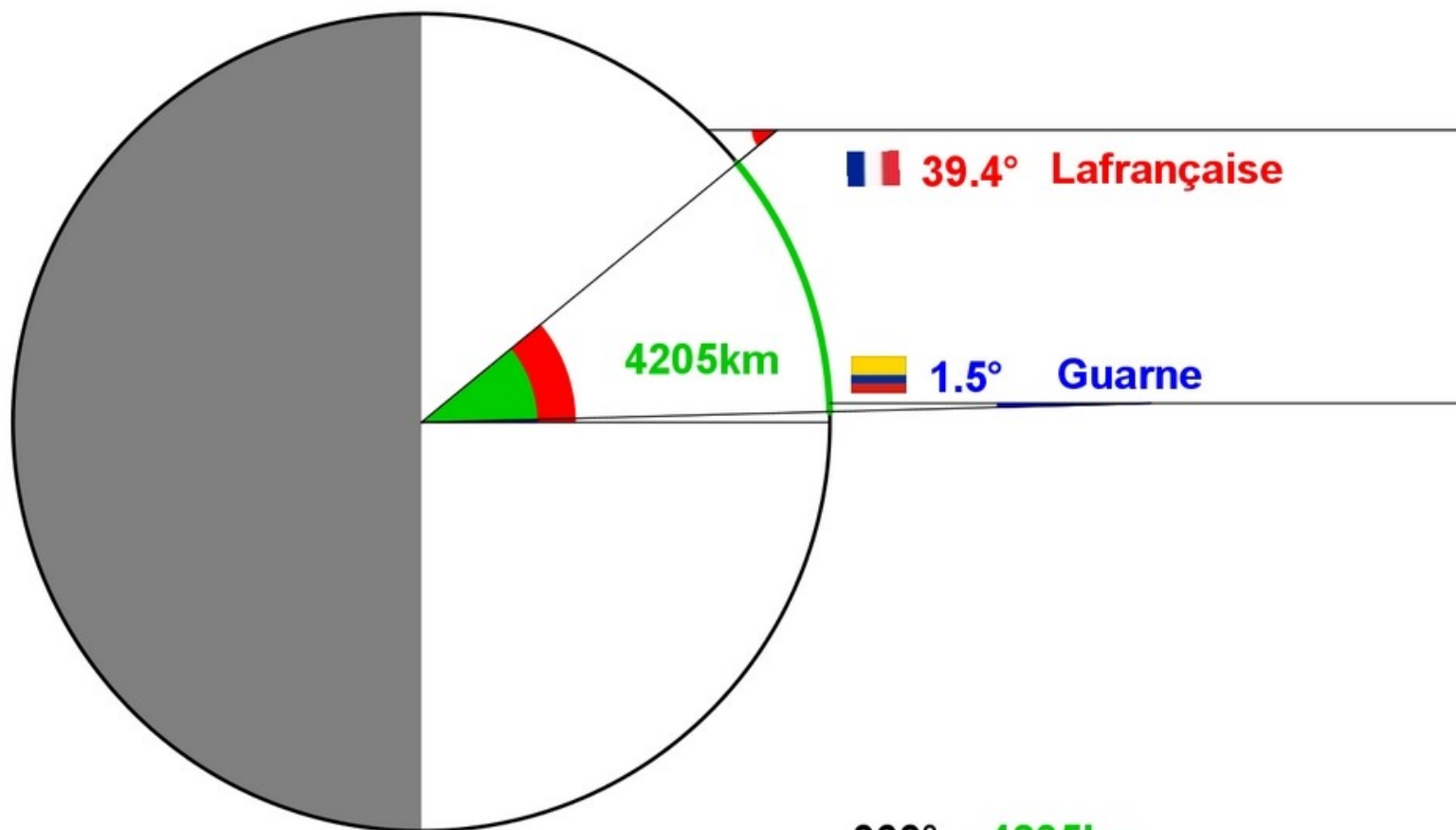


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-76.522

Date	Gnomon	Shadow	Angle
02 September 2021	15.2cm	-0.4cm	-1.5°
03 September 2021	15.1cm	-0.3cm	-1.1°
06 September 2021	15.1cm	0.0cm	0.0°
10 September 2021	15.0cm	0.4cm	1.5°
16 September 2021	7.4cm	0.5cm	3.9°
22 September 2021	15.1cm	1.7cm	6.4°

10/09/2021 (Lafrançaise-France) Latitude: 44.127°

10/09/2021 (Guarne-Colombia) Latitude: 6.274°



$$\text{circumference} = \frac{360^\circ \times 4205\text{km}}{39.4^\circ - 1.5^\circ} = 39942 \text{ km}$$

Distance	Angle
circumference	360°
4205km	39.4° - 1.5°



Ilion, Greece

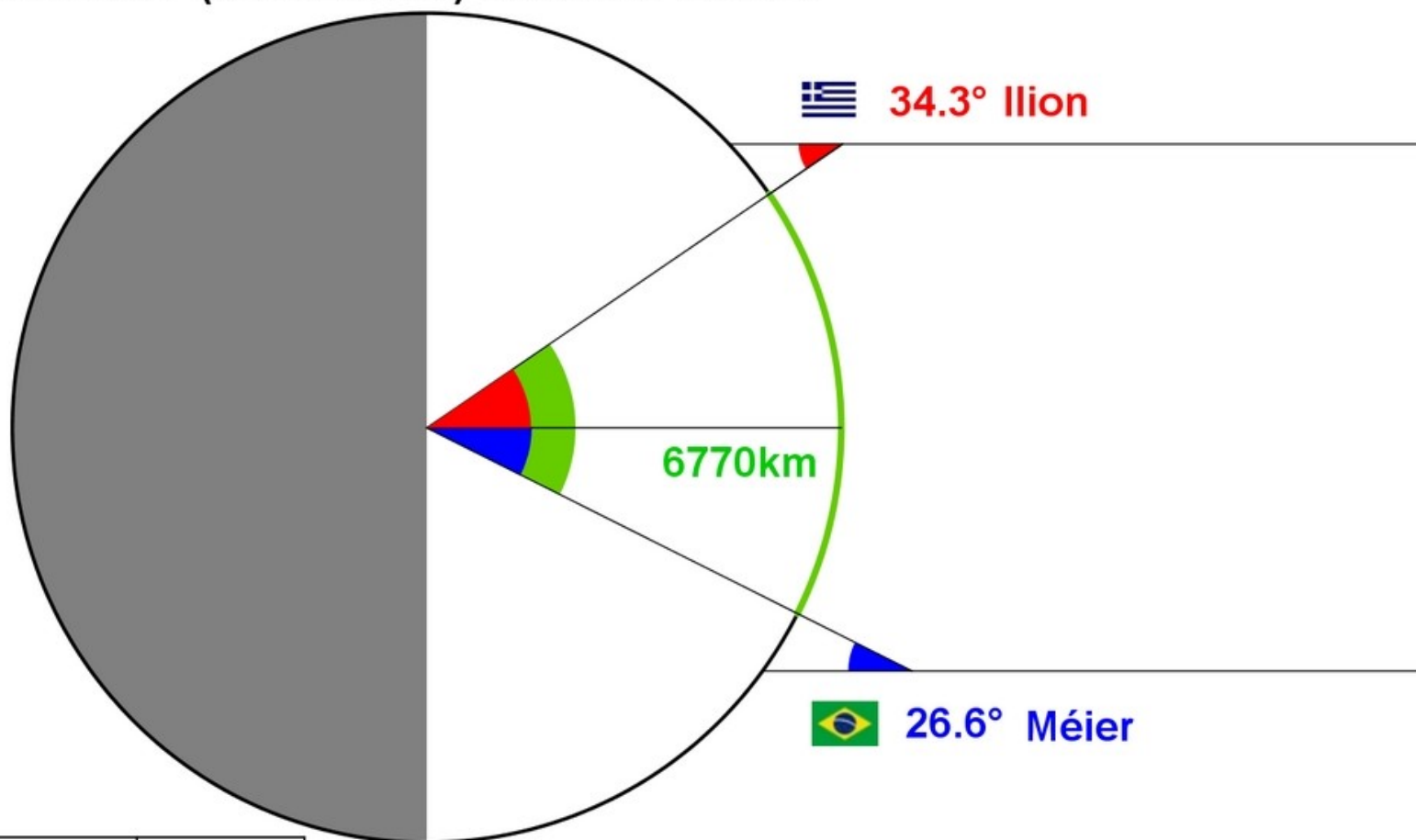


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Ilion	Greece	11th JuniorHigh School of Ilion	38.033	23.697

Date	Gnomon	Shadow	Angle
01 September 2021	40.0cm	23.0cm	29.9°
03 September 2021	40.0cm	23.6cm	30.5°
13 September 2021	40cm	27.3cm	34.3°
14 September 2021	20.0cm	13.0cm	33.0°
17 September 2021	30.0cm	21.7cm	35.9°
18 September 2021	30.0cm	22.1cm	36.4°
20 September 2021	30.0cm	22.6cm	37.0°
21 September 2021	40.0cm	30.8cm	37.6°
22 September 2021	100.0cm	78.0cm	38.0°
24 September 2021	100.0cm	80.2cm	38.7°

13/09/2021 (Ilion-Greece) Latitude: 38.033°

13/09/2021 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
6770km	34.3°+26.6°

$$\text{circumference} = \frac{360^\circ \times 6770\text{km}}{34.3^\circ + 26.6^\circ} = 40020 \text{ km}$$



Irbid, Jordan

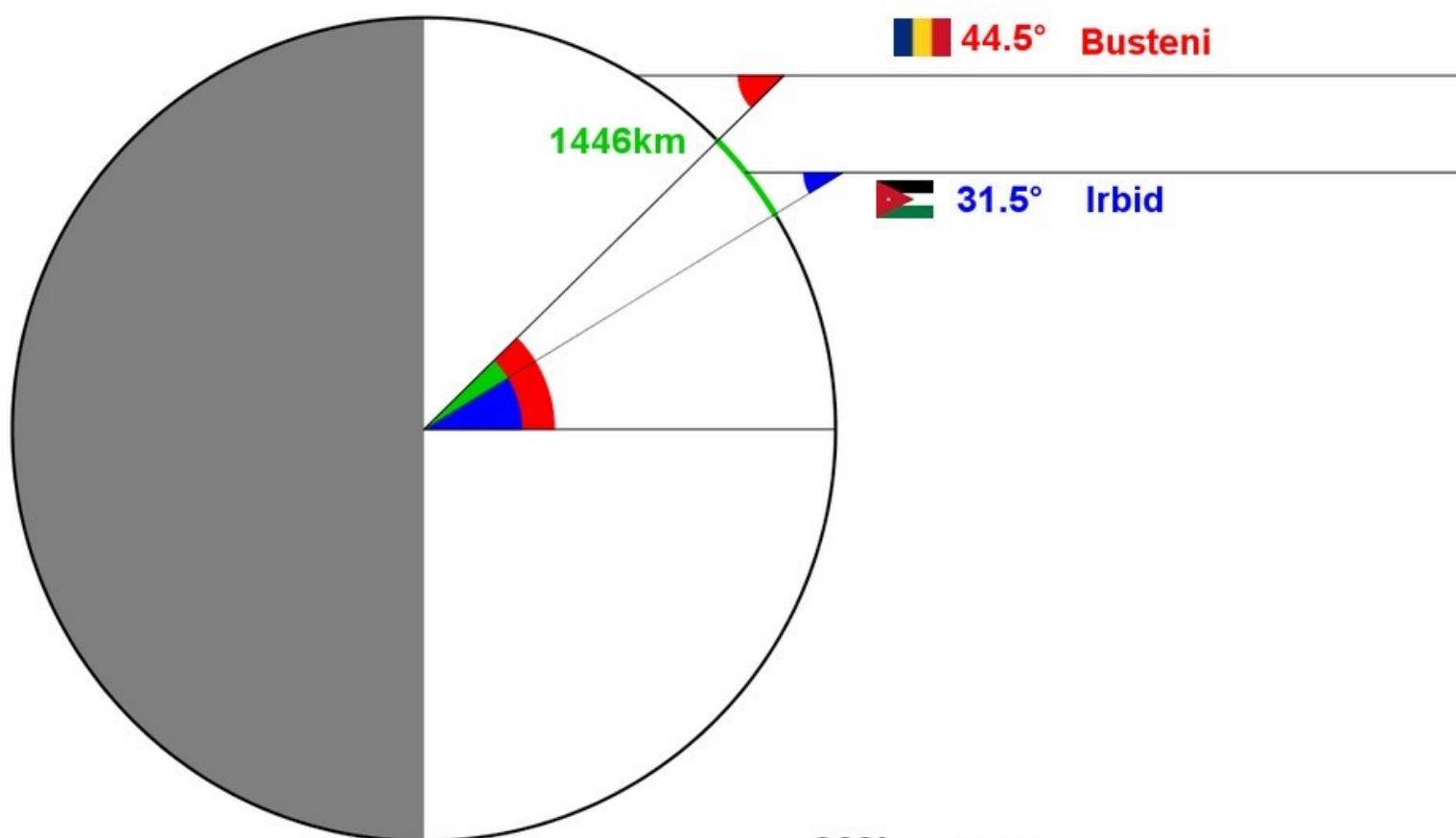


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Irbid	Jordan	Mashar'eh Military School	32.405	35.588

Date	Gnomon	Shadow	Angle
16 September 2021	100.0cm	57.1cm	29.7°
17 September 2021	100.0cm	58.1cm	30.2°
20 September 2021	45.0cm	27.6cm	31.5°
21 September 2021	76.0cm	47.3cm	31.9°
22 September 2021	100.0cm	63.2cm	32.3°
27 September 2021	36cm	24.6cm	34.3°

20/09/2021 (Busteni-Romania) Latitude: 45.416°

20/09/2021 (Irbid-Jordan) Latitude: 32.405°




Distance	Angle
circumference	360°
1446km	44.5° - 31.5°

$$\text{circumference} = \frac{360^\circ \times 1446\text{km}}{44.5^\circ - 31.5^\circ} = 40043 \text{ km}$$



Lafrançaise, France

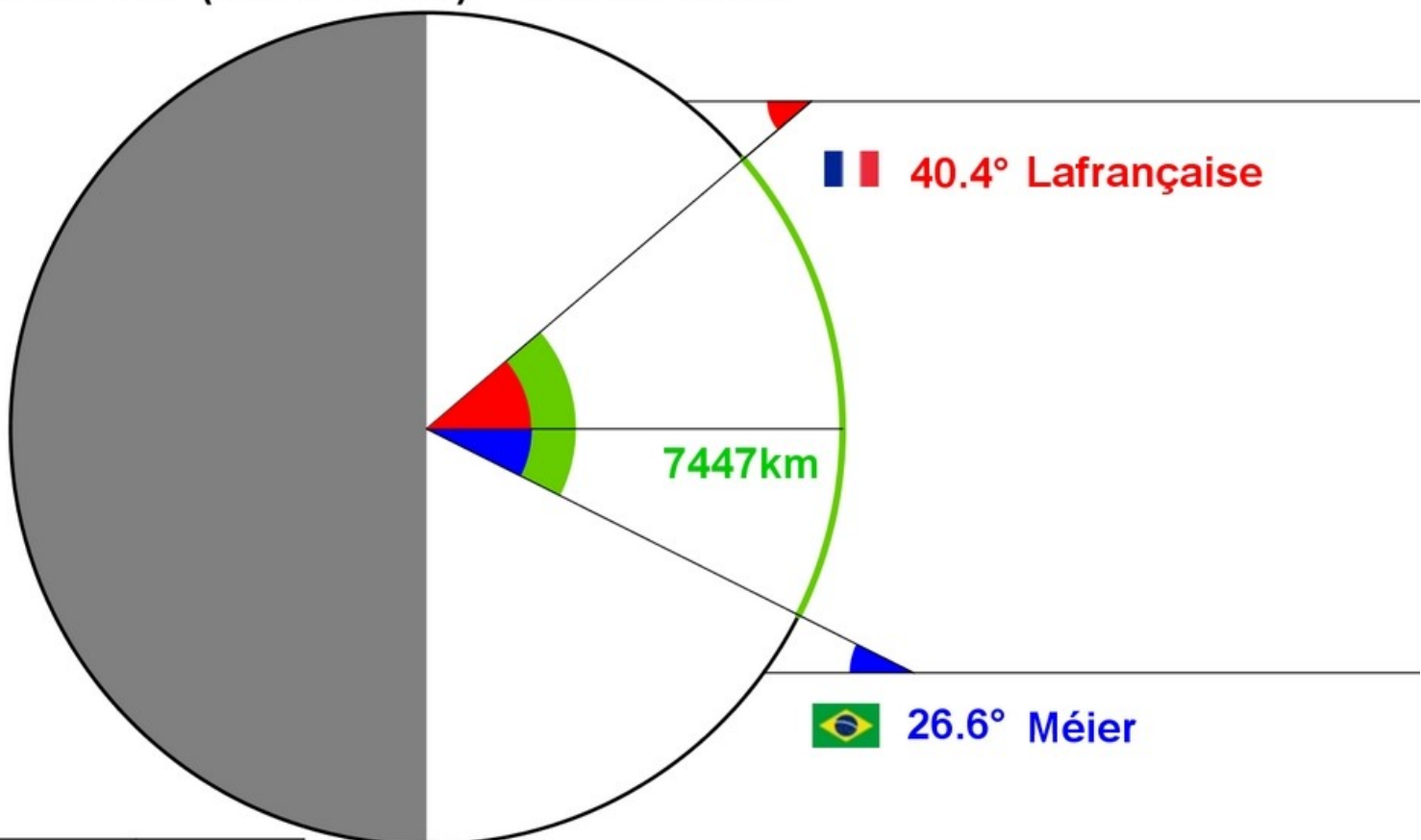


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237

Date	Gnomon	Shadow	Angle
01 September 2021	100.0cm	73.0cm	36.1°
05 September 2021	25.0cm	19.0cm	37.2°
06 September 2021	25.0cm	19.5cm	38.0°
07 September 2021	100.0cm	79.0cm	38.3°
09 September 2021	100cm	83.0cm	39.7°
10 September 2021	100.0cm	82.0cm	39.4°
13 September 2021	100cm	85.0cm	40.4°
17 September 2021	100.0cm	90.5cm	42.1°
20 September 2021	100.0cm	94.0cm	43.2°
21 September 2021	100.0cm	95.5cm	43.7°
22 September 2021	200cm	194cm	44.1°
27 September 2021	100cm	103cm	45.8°
30 September 2021	100cm	108cm	47.2°

13/09/2021 (Lafrançaise-France) Latitude: 44.127°

13/09/2021 (Méier-Brazil) Latitude: -22.904°




Distance	Angle
circumference	360°
7447km	40.4° + 26.6°

$$\text{circumference} = \frac{360^\circ \times 7447\text{km}}{40.4^\circ + 26.6^\circ} = 40014 \text{ km}$$



Medellín, Colombia

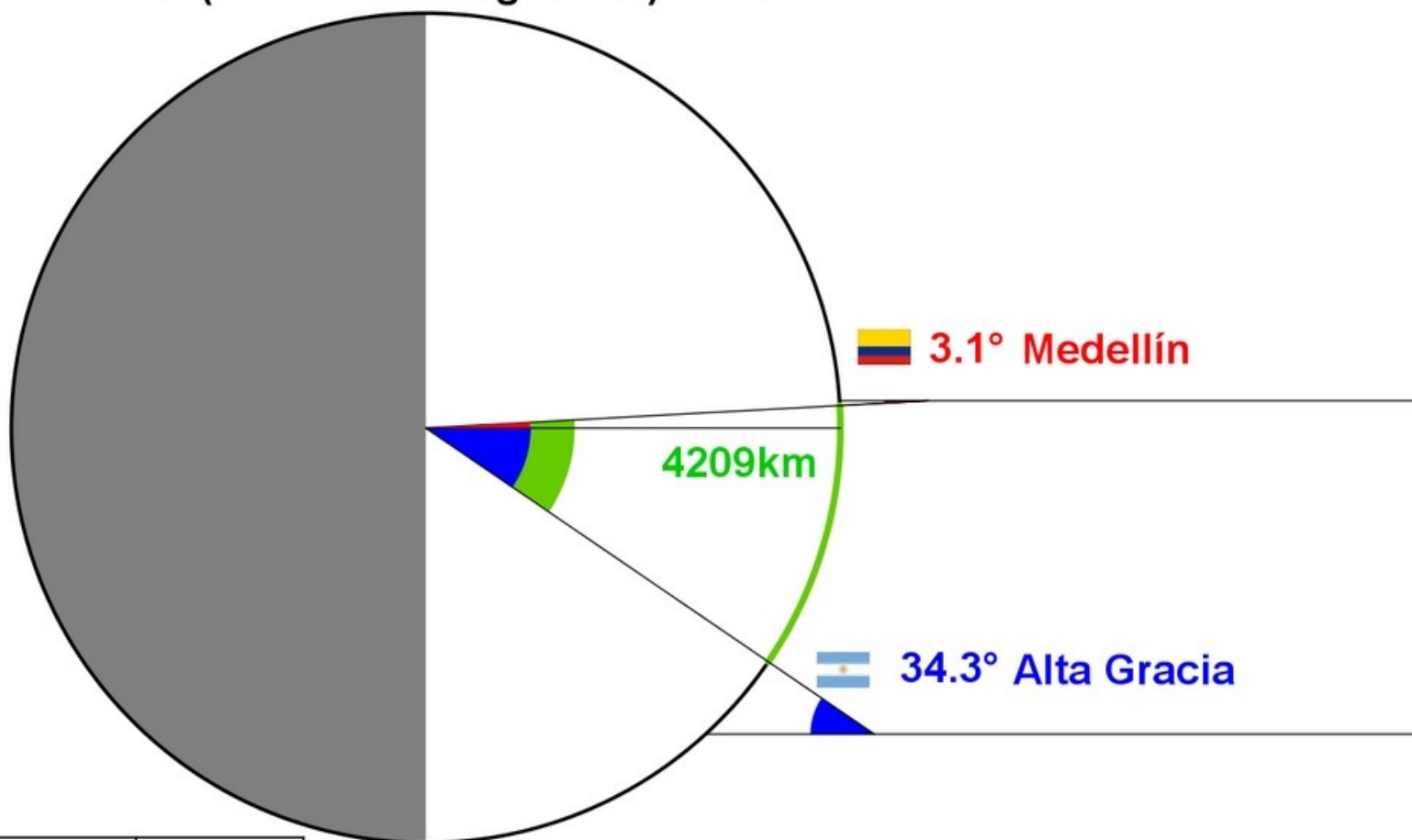


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Medellín	Colombia	Grupo Astrofánaticos	6.231	-75.591

Date	Gnomon	Shadow	Angle
13 September 2021	7.5cm	0.4cm	3.1°

13/09/2021 (Medellín-Colombia) Latitude: 6.231°

13/09/2021 (Alta Gracia-Argentina) Latitude: -31.656°




Distance	Angle
circumference	360°
4209km	3.1° + 34.3°

$$\text{circumference} = \frac{360^\circ \times 4209\text{km}}{3.1^\circ + 34.3^\circ} = 40514 \text{ km}$$



Meier, Brazil

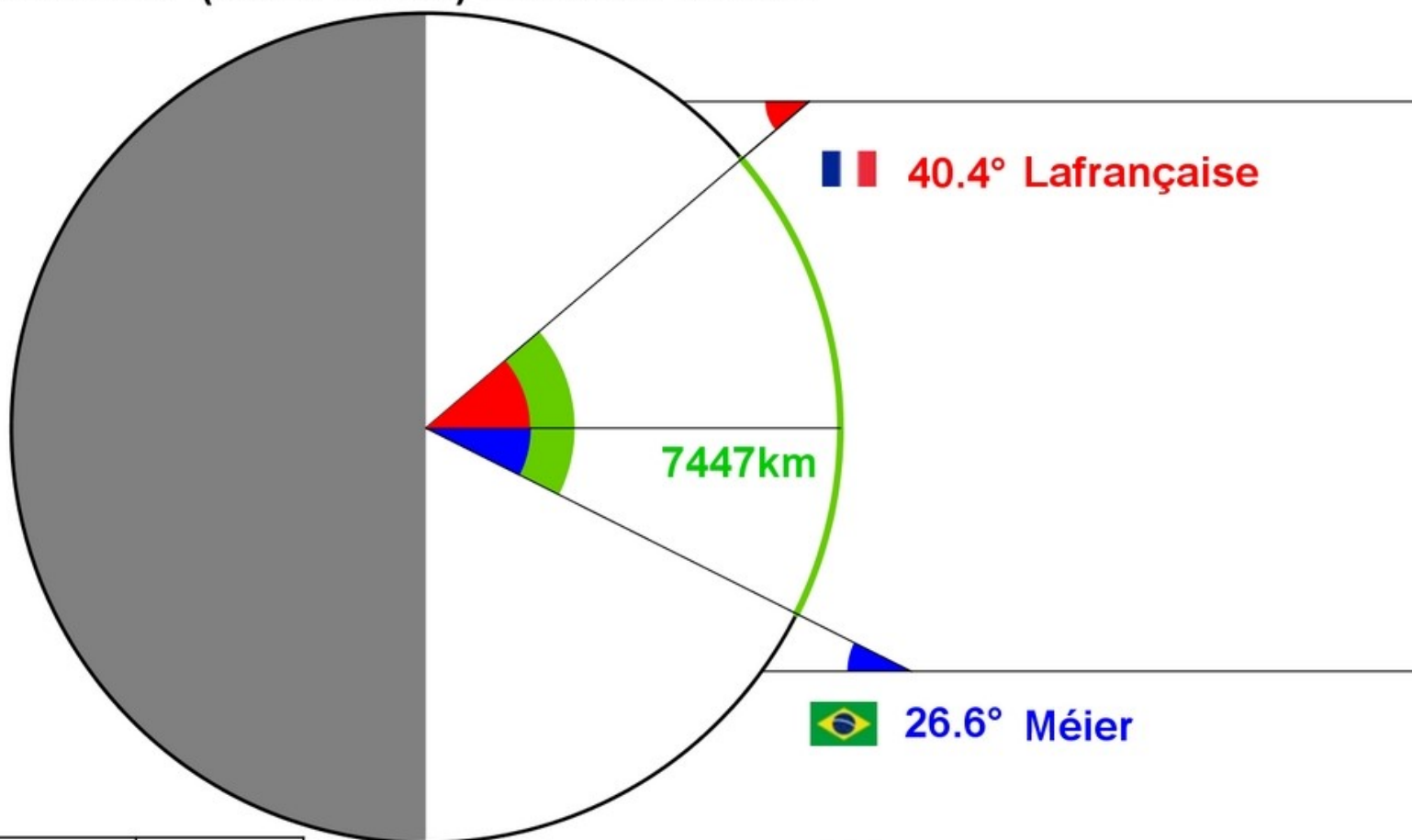


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Méier	Brazil	Escola Municipal Bento Ribeiro	-22.904	-43.280

Date	Gnomon	Shadow	Angle
02 September 2021	54.0cm	-27.0cm	-26.6°
03 September 2021	54.0cm	-39.0cm	-35.8°
04 September 2021	54.0cm	-33.0cm	-31.4°
08 September 2021	54.0cm	-31.0cm	-29.9°
09 September 2021	54.0cm	-24.0cm	-24.0°
13 September 2021	54.0cm	-27.0cm	-26.6°
14 September 2021	54.0cm	-27.0cm	-26.6°
15 September 2021	54.0cm	-27.0cm	-26.6°
17 September 2021	54.0cm	-11.0cm	-11.5°
18 September 2021	54.0cm	-27.0cm	-26.6°
20 September 2021	54.0cm	-22.0cm	-22.2°
21 September 2021	54.0cm	-26.0cm	-25.7°
22 September 2021	54.0cm	-23.0cm	-23.1°

13/09/2021 (Lafrançaise-France) Latitude: 44.127°

13/09/2021 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
7447km	40.4° + 26.6°

$$\text{circumference} = \frac{360^\circ \times 7447\text{km}}{40.4^\circ + 26.6^\circ} = 40014 \text{ km}$$



Mohammedia, Tunisia

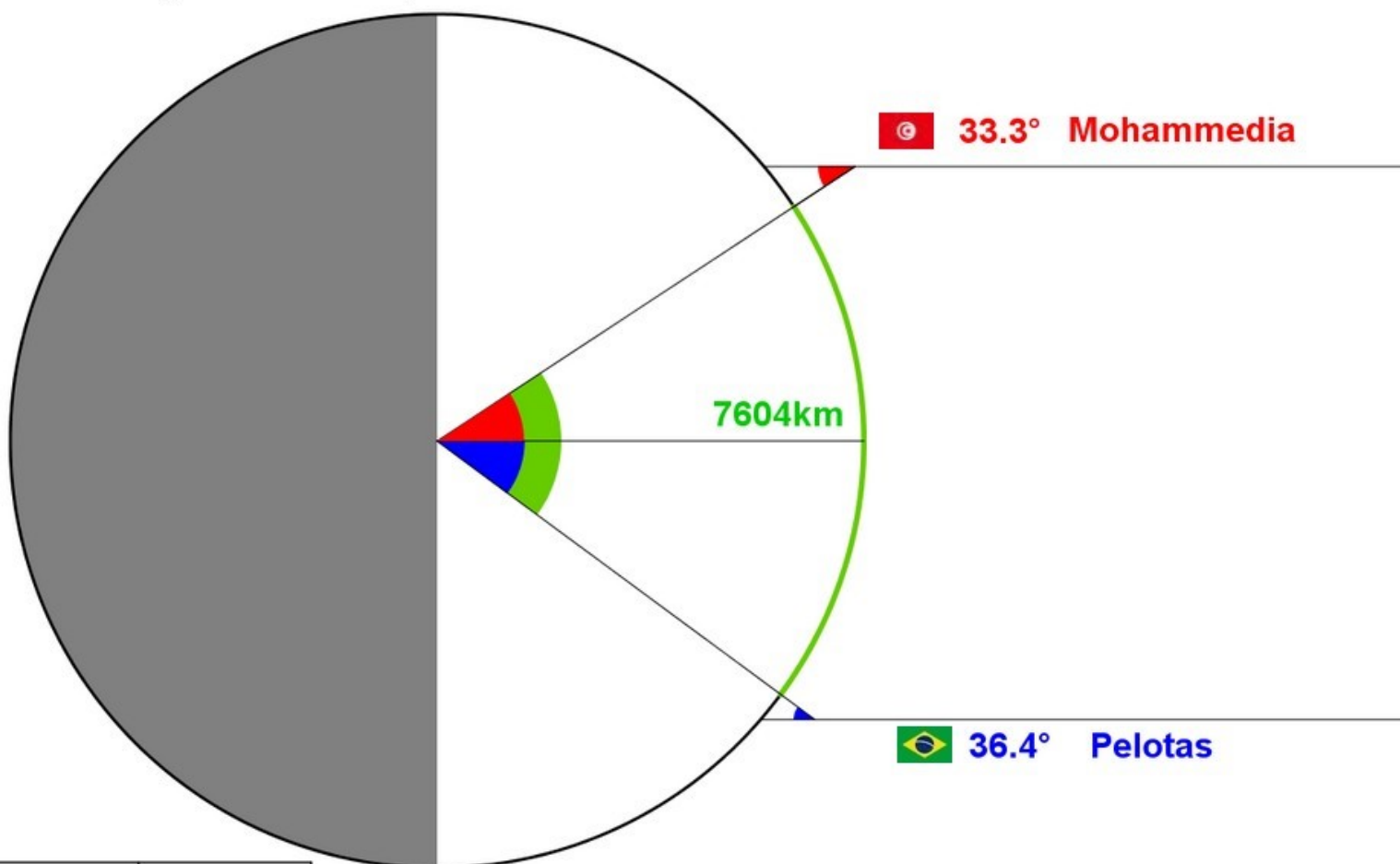


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Mohammedia	Tunisia	Lycée M'hamdia	36.678	10.152

Date	Gnomon	Shadow	Angle
22 September 2021	46.5cm	30.5cm	33.3°

22/09/2021 (Mohammedia-Tunisia) Latitude: 36.674°

22/09.2021 (Pelotas-Brazil) Latitude: -31.772°



Distance	Angle
circumference	360°
7604km	33.3° + 36.4°

$$\text{circumference} = \frac{360^\circ \times 7604\text{km}}{33.3^\circ + 36.4^\circ} = 39275 \text{ km}$$



Pelotas, Brazil

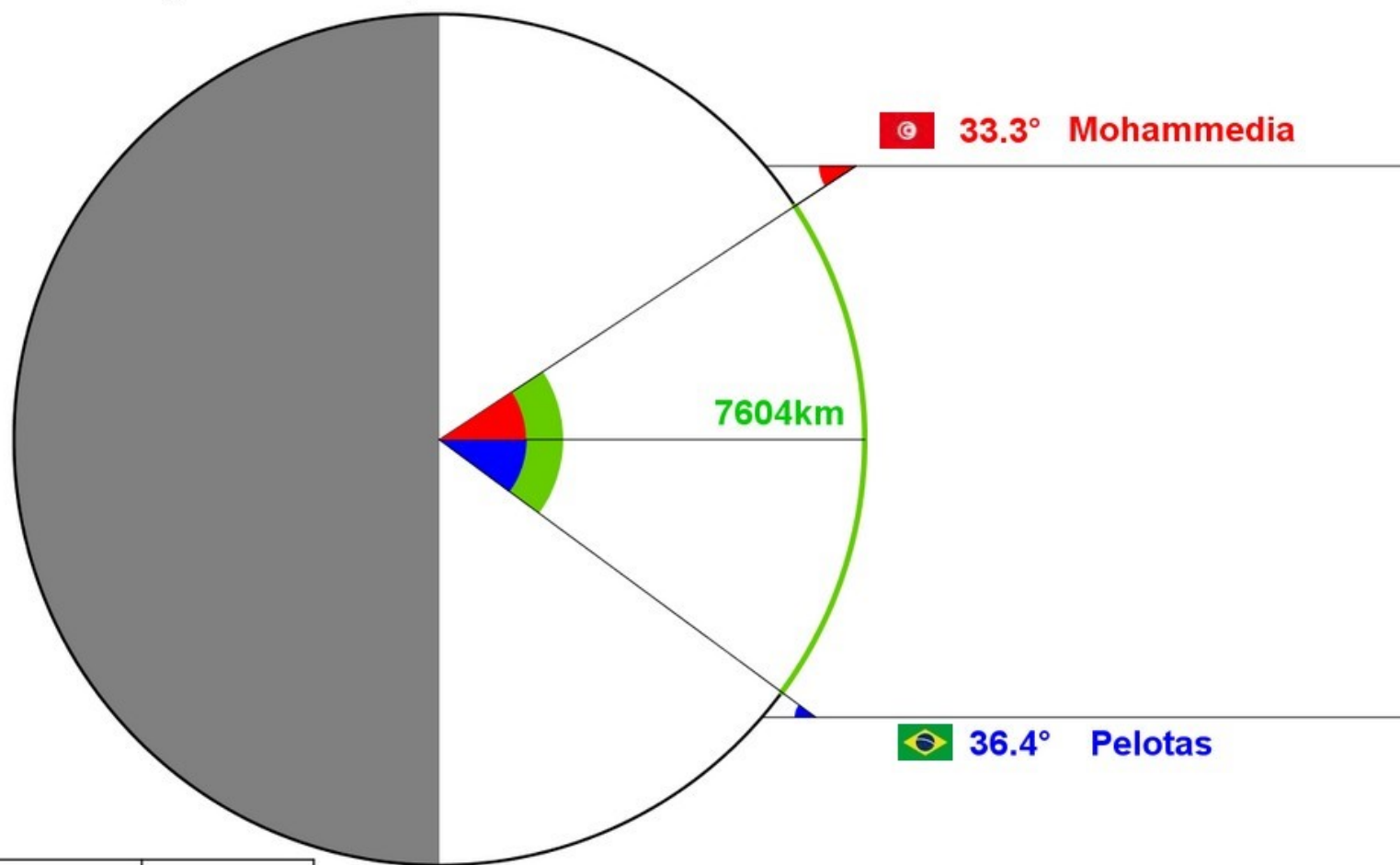


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Pelotas	Brazil	Federal University of Pelotas	-31.772	-52.329

Date	Gnomon	Shadow	Angle
22 September 2021	57cm	-42cm	-36.4°

22/09/2021 (Mohammedia-Tunisia) Latitude: 36.674°

22/09.2021 (Pelotas-Brazil) Latitude: -31.772°



Distance	Angle
circumference	360°
7604km	33.3° + 36.4°

$$\text{circumference} = \frac{360^\circ \times 7604\text{km}}{33.3^\circ + 36.4^\circ} = 39275 \text{ km}$$

Local: Rio Grande/

Cassino-RS

Data: 22/09/2021

Hora: 12:35

Haste: 57cm

Sombra: 42cm



Rio Cuarto, Argentina

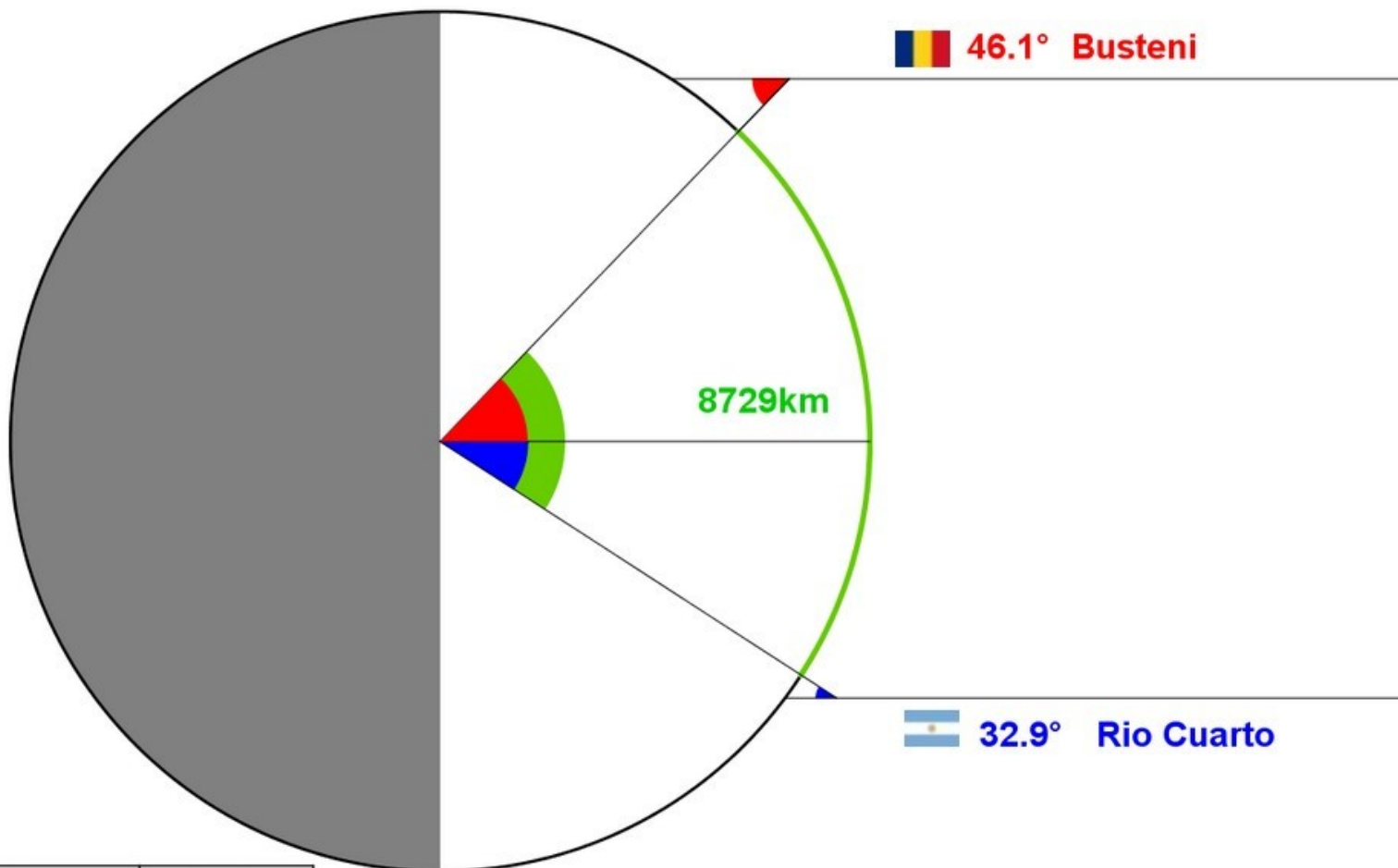


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio Cuarto	Argentina	Colegio Concordia	-33.149	-64.351

Date	Gnomon	Shadow	Angle
24 September 2021	52.5cm	-34.0cm	-32.9°
29 September 2021	52.5cm	-33.5cm	-32.5°

24/09/2021 (Busteni-Romania) Latitude: 45.416°

24/09/2021 (Rio Cuarto-Argentina) Latitude: -33.149°




Distance	Angle
circumference	360°
8729km	46.1° + 32.9°

$$\text{circumference} = \frac{360^\circ \times 8729\text{km}}{46.1^\circ + 32.9^\circ} = 39778 \text{ km}$$



Rio de Janeiro CENOM, Brazil

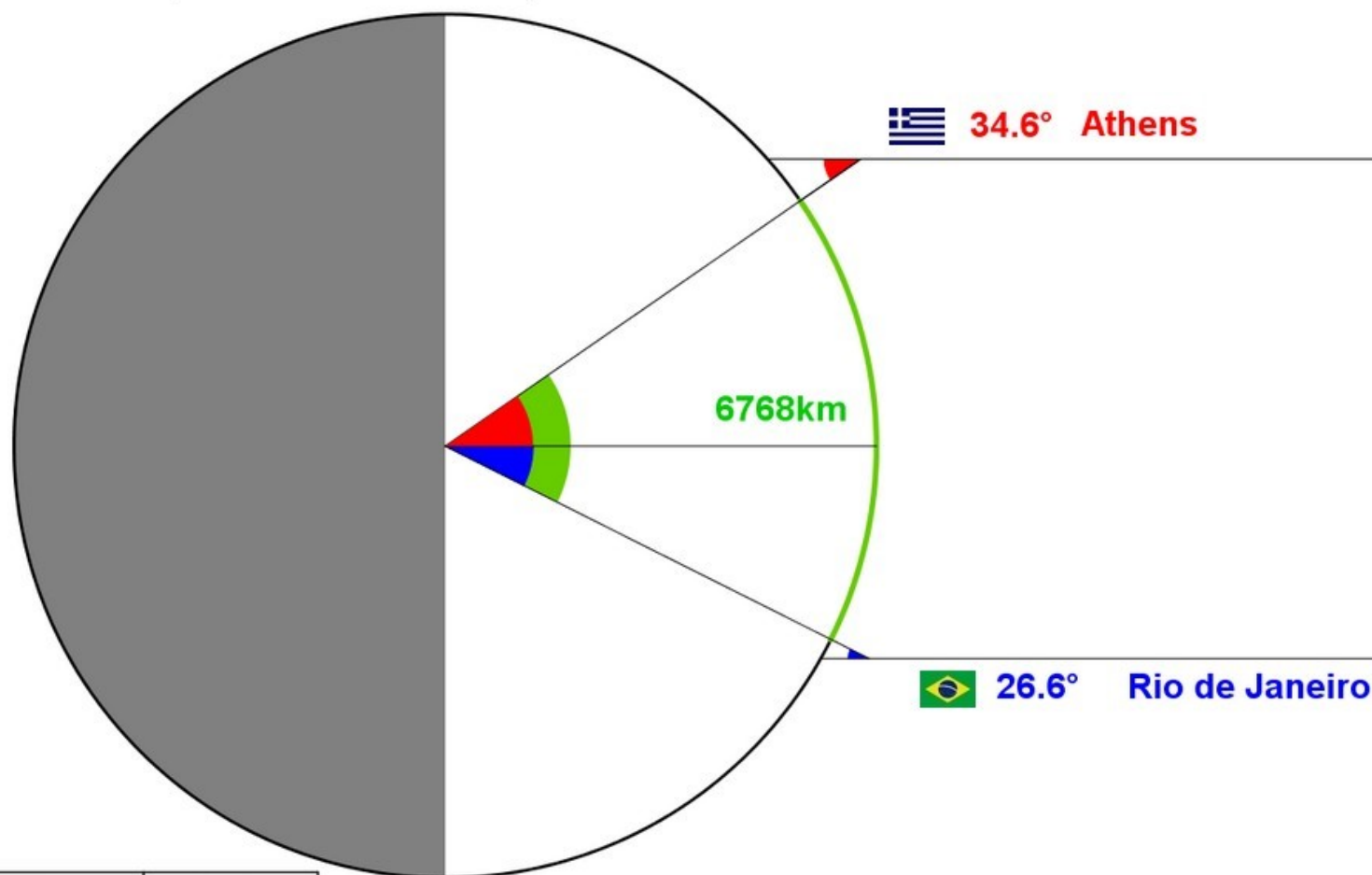


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317

Date	Gnomon	Shadow	Angle
14 September 2021	20.0cm	-10.0cm	-26.6°
15 September 2021	20.0cm	-10.0cm	-26.6°
17 September 2021	20.0cm	-10.0cm	-26.6°
20 September 2021	20.0cm	-10.0cm	-26.6°
21 September 2021	20cm	-9cm	-24.2°
22 September 2021	20.0cm	-9cm	-24.2°
24 September 2021	20.0cm	-8.0cm	-21.8°
27 September 2021	20cm	-9cm	-24.2°
28 September 2021	20cm	-8cm	-21.8°
29 September 2021	20cm	-8cm	-21.8°

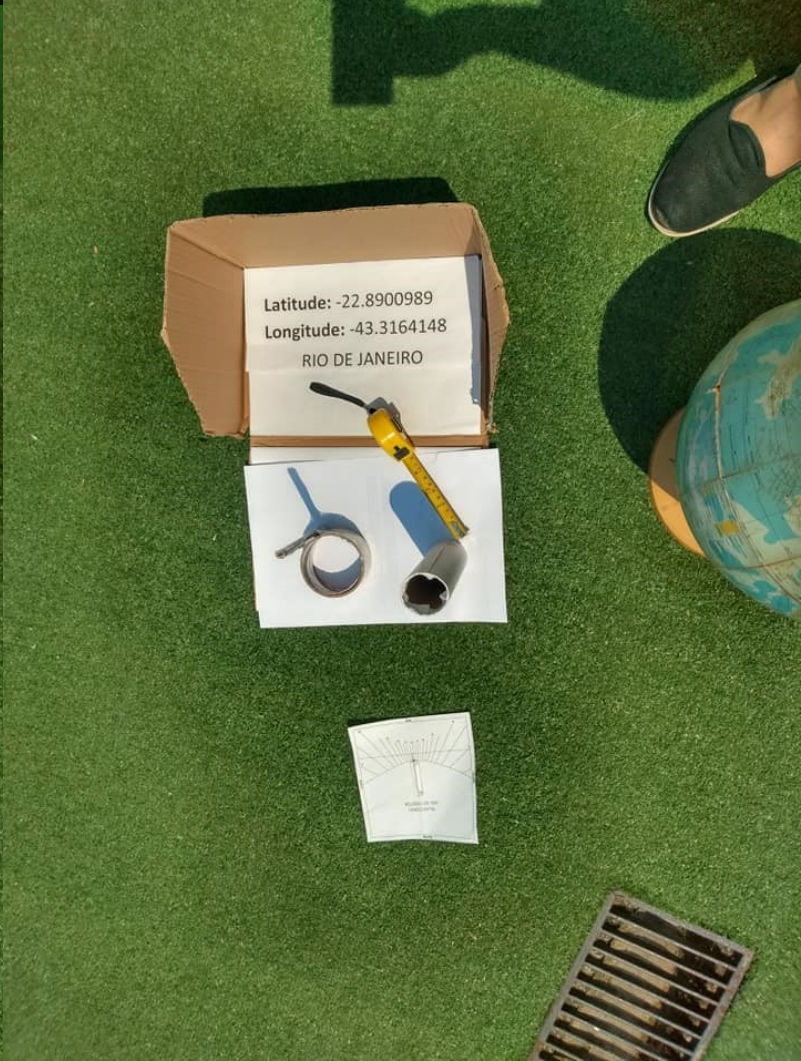
14/09/2021 (Athens-Greece) Latitude: 38.027°

14/09/2021 (Rio de Janeiro-Brazil) Latitude: -22.89°



Distance	Angle
circumference	360°
6768km	34.6° + 26.6°

$$\text{circumference} = \frac{360^\circ \times 6768\text{km}}{34.6^\circ + 26.6^\circ} = 39812 \text{ km}$$



Santarém, Brazil

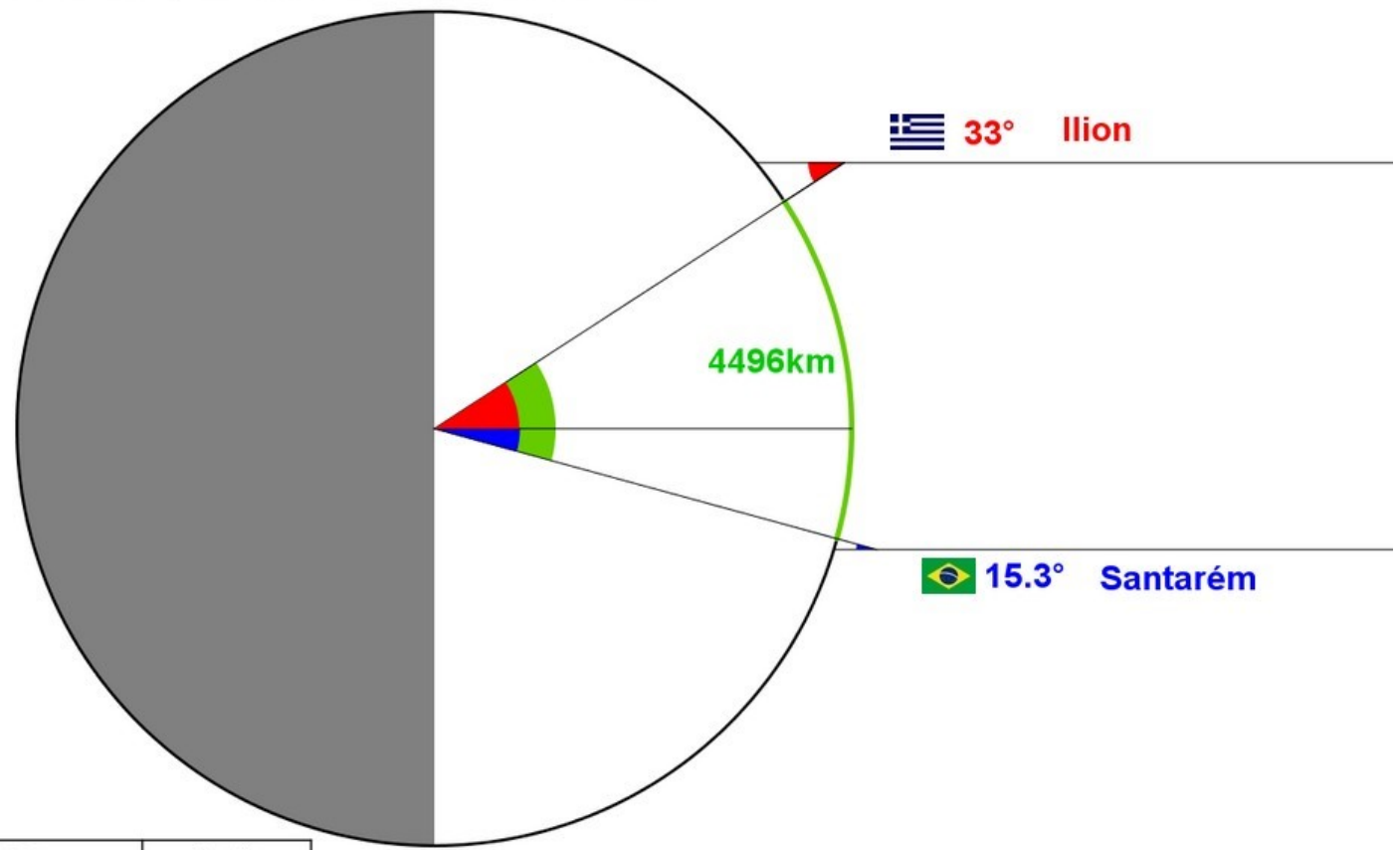


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Santarém	Brazil	Santarém Adventist College	-2.439	-54.699

Date	Gnomon	Shadow	Angle
01 September 2021	11.0cm	-5.0cm	-24.4°
03 September 2021	11.0cm	-5.0cm	-24.4°
04 September 2021	11.0cm	-5.0cm	-24.4°
06 September 2021	11.0cm	-3.0cm	-15.3°
08 September 2021	11.0cm	-5.0cm	-24.4°
09 September 2021	11.0cm	-5.0cm	-24.4°
13 September 2021	11.0cm	-3.0cm	-15.3°
14 September 2021	11cm	-3cm	-15.3°
16 September 2021	11.0cm	-6.0cm	-28.6°
17 September 2021	11.0cm	-2.0cm	-10.3°
21 September 2021	34cm	-14.5cm	-23.1°
27 September 2021	11cm	-1.2cm	-6.2°
28 September 2021	11cm	-2cm	-10.3°
29 September 2021	11cm	-2cm	-10.3°
30 September 2021	11cm	-1.5cm	-7.8°

14/09/2021 (Ilion-Greece) Latitude: 38.033°

14/09/2021 (Santarém-Brazil) Latitude: -2.439°




Distance	Angle
circumference	360°
4496km	33° + 15.3°

$$\text{circumference} = \frac{360^\circ \times 4496\text{km}}{33^\circ + 15.3^\circ} = 33511 \text{ km}$$



Úbeda, Spain

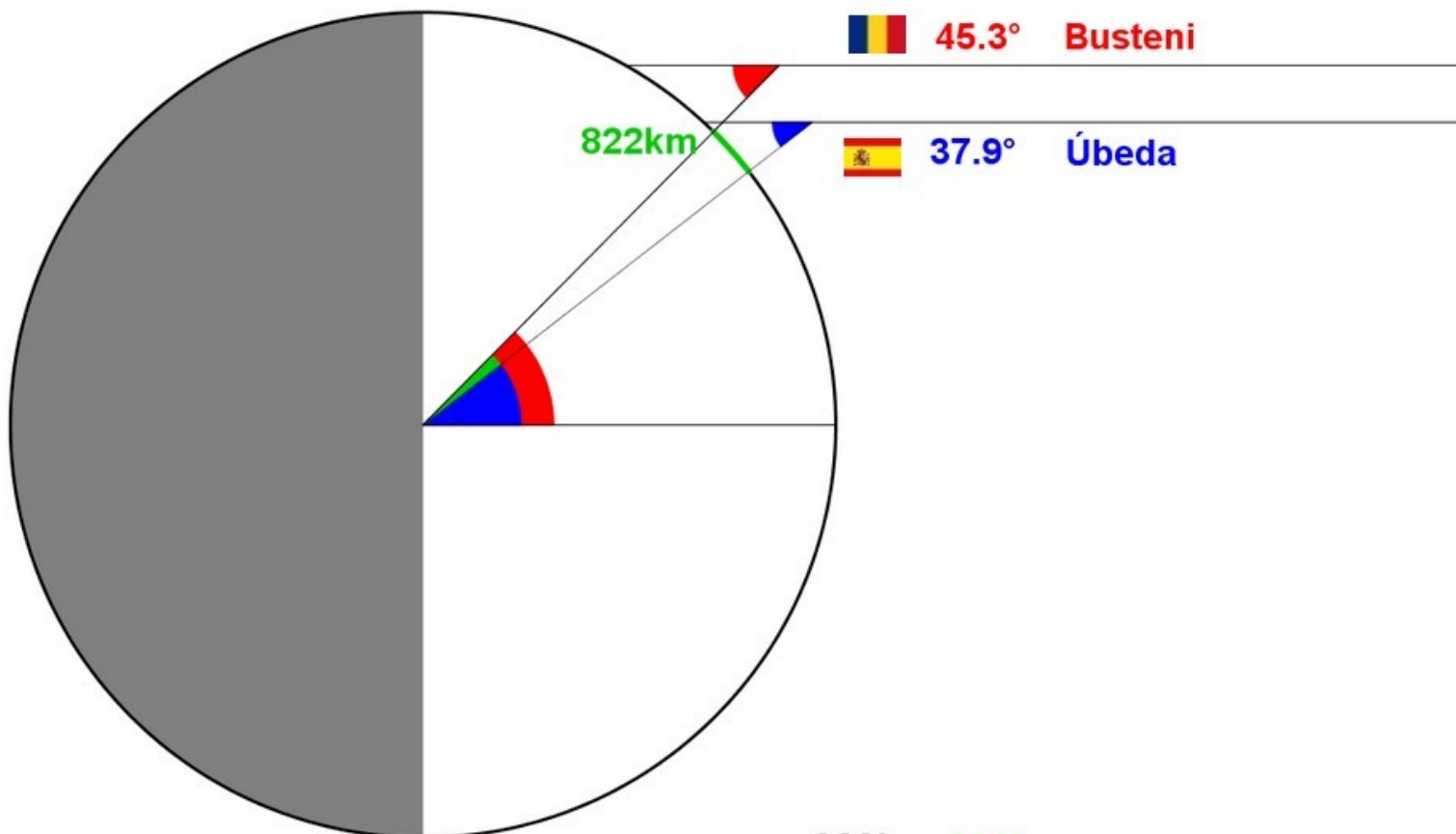


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Úbeda	Spain	Colegio Salesiano Santo Domingo Savio	38.017	-3.367

Date	Gnomon	Shadow	Angle
20 September 2021	30.8cm	23.0cm	36.8°
22 September 2021	30.8cm	24cm	37.9°
23 September 2021	30.8cm	24.2cm	38.2°

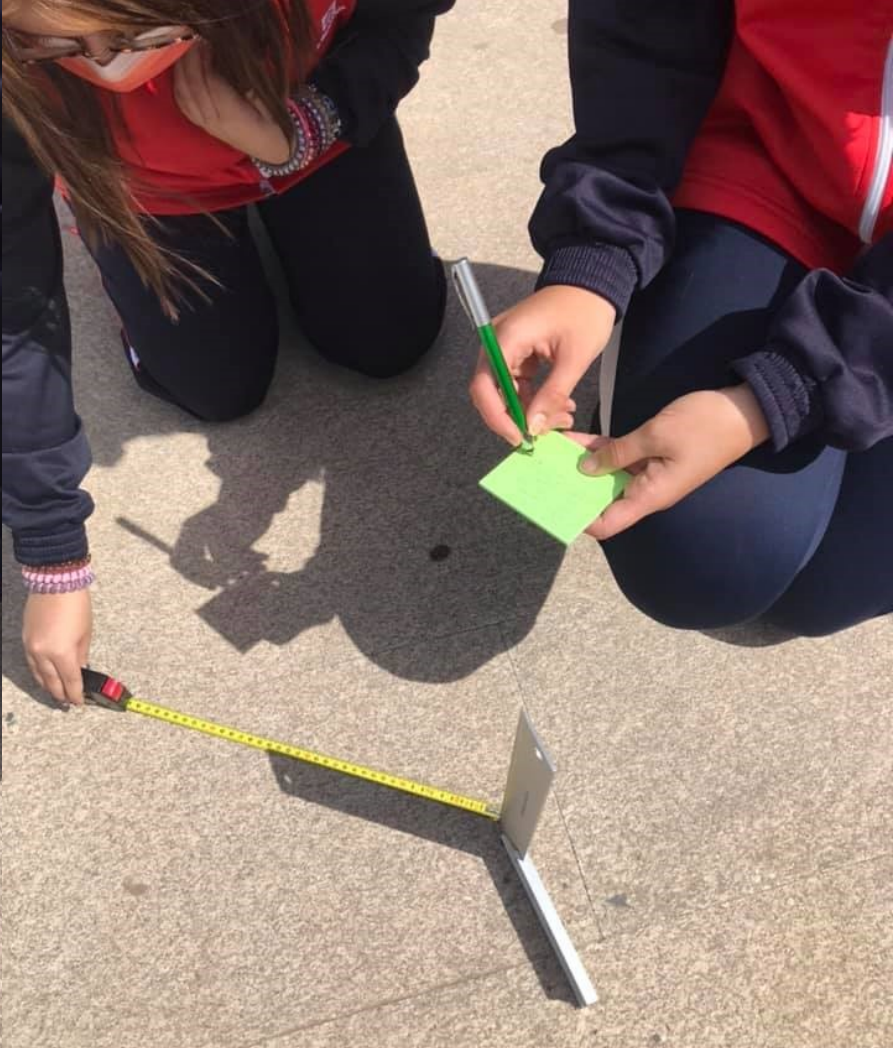
22/09.2021 (Busteni-Romania) Latitude: 45.416°

22/09/2021 (Úbeda-Spain) Latitude: 38.017°



Distance	Angle
circumference	360°
822km	45.3° - 37.9°

$$\text{circumference} = \frac{360^\circ \times 822\text{km}}{45.3^\circ - 37.9^\circ} = 39989 \text{ km}$$



Yarumal, Colombia

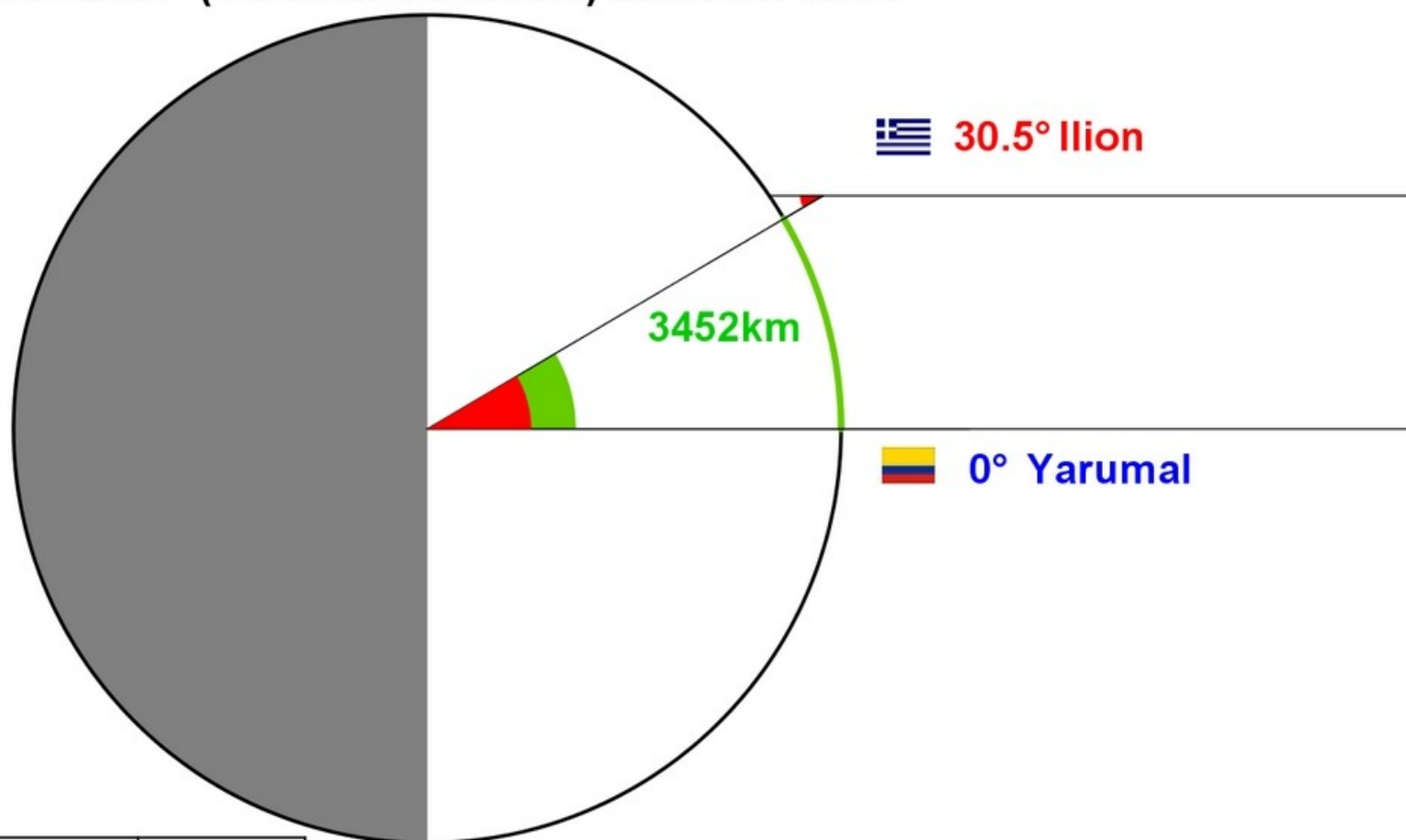


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Yarumal	Colombia	Institución Educativa San Luis	6.966	-75.416

Date	Gnomon	Shadow	Angle
03 September 2021	150.0cm	0.0cm	0.0°

03/09/2021 (Ilion-Greece) Latitude: 38.033°

03/09/2021 (Yarumal-Colombia) Latitude: 6.966°



Distance	Angle
circumference	360°
3452km	30.5°+0°

$$\text{circumference} = \frac{360^\circ \times 3452\text{km}}{30.5^\circ + 0^\circ} = 40745 \text{ km}$$

Mediodía Cenital



