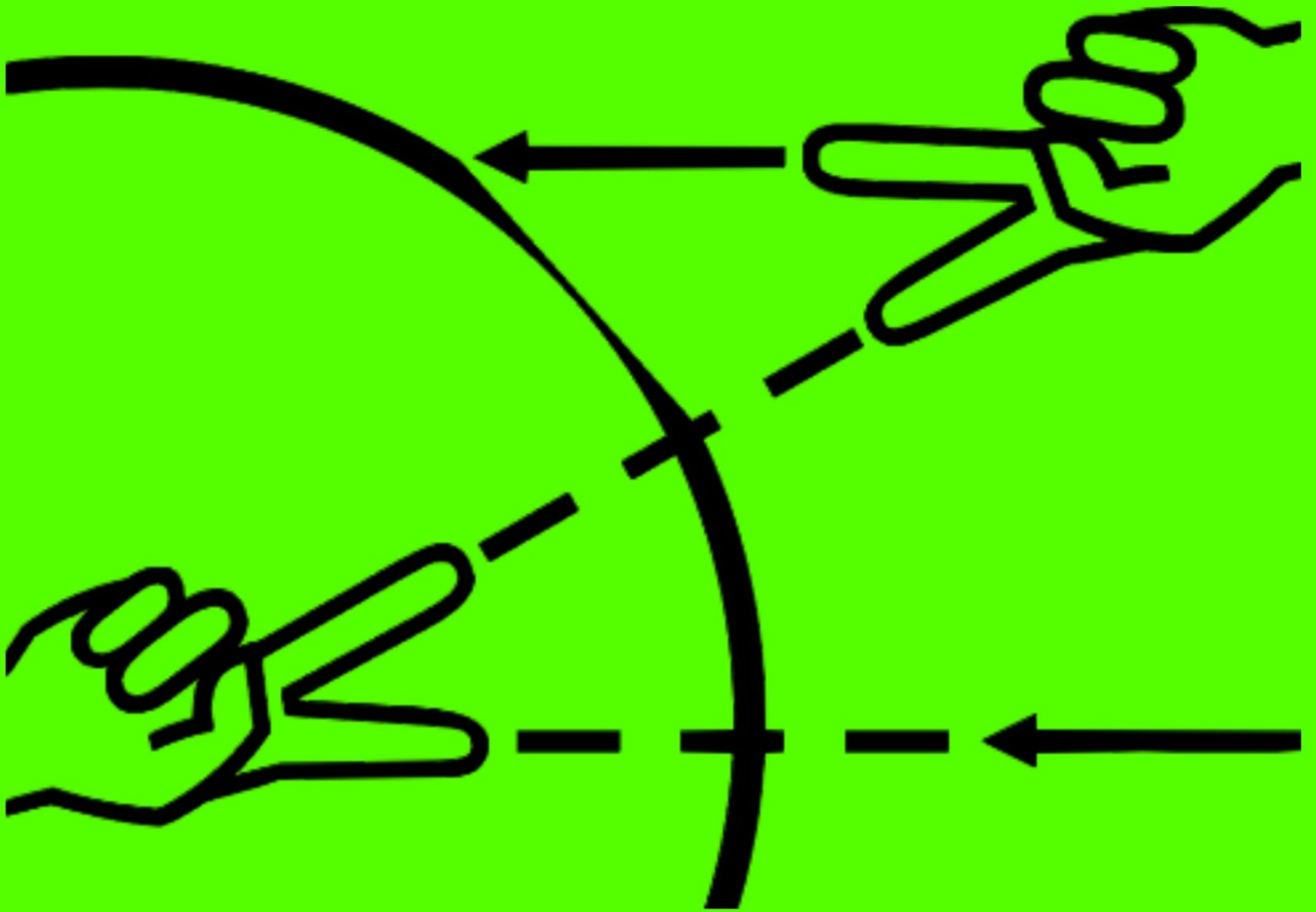


Eratostrhenes



3 Continents

11 Countries

25 Schools

198 Measures

N°54

June 2020

3 Continents

11 Countries

25 Schools

198 Measures

ARGENTINA (3)

Alta Gracia, Buenos Aires, Chivilcoy

BRAZIL (9)

Piranguinho, Rio de Janeiro, São Mateus, Méier, Duque de Caxias, Irajá, São João de Meriti, Irajá, Freguesia

COLOMBIA (1)

Guarne

FRANCE (1)

Lafrançaise

GERMANY (1)

Garmisch Partenkirchen

GREECE (4)

Aigio, Ilion, Ioannina, Petroupoli

INDIA (1)

Yamunanagar

PUERO RICO (1)

Bayamón

ROMANIA (3)

Busteni, Dorohoi Margineni

SPAIN (1)

Úbeda

UKRAINE (1)

Lozova

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
	Bayamón	Puerto Rico	AECM Carribean University	18.383	-66.168
	Buenos Aires ENS1	Argentina	ENS N° 1	-34.455	-58.544
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535
	Chivilcoy	Argentina	Parque Cielos del Sur	-34.911	-60.014
	Dorohoi	Romania	Grigore Ghica National College	47.953	26.394
	Duque de Caxias	Brazil	Complexo Cultural Caça Talentos	-21.791	-43.327
	Freguesia	Brazil	Instituto Presbiteriano Álvaro Reis	-22.943	-43.356
	Garmisch Partenkirchen	Germany	St.-Irmengard-Gymnasium	47.493	11.102
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449
	Ilion	Greece	11th JuniorHigh School of Ilion	38.033	23.697
	Ioannina	Greece	Experimental College	39.655	20.846
	Irajá	Brazil	IFRJ. instituto Federal do Rio de Janeiro	-22.501	-43.195
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237
	Lozova	Ukraine	Lozova Secondary School № 12	48.881	36.291
	Mărgineni	Romania	Gh. Popescu School	44.533	24.554
	Méier	Brazil	Escola Municipal Bento Ribeiro	-22.904	-43.280
	Petroupoli	Greece	4o Junior High School	38.036	23.674
	Piranguinho	Brazil	Universidade Federal de Itajubá	-22.411	-45.535
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317
	São João de Meriti	Brazil	31 Marechal Rondon	-22.800	-43.367
	São Mateus	Brazil	Escola Estadual de Ensino Médio Nestor Gomes	-18.716	-39.856
	Úbeda	Spain	Colegio Salesiano Santo Domingo Savio	38.017	-3.367
	Yamunanagar	India	C V Raman Science Club	30.133	77.283

Aigio, Greece

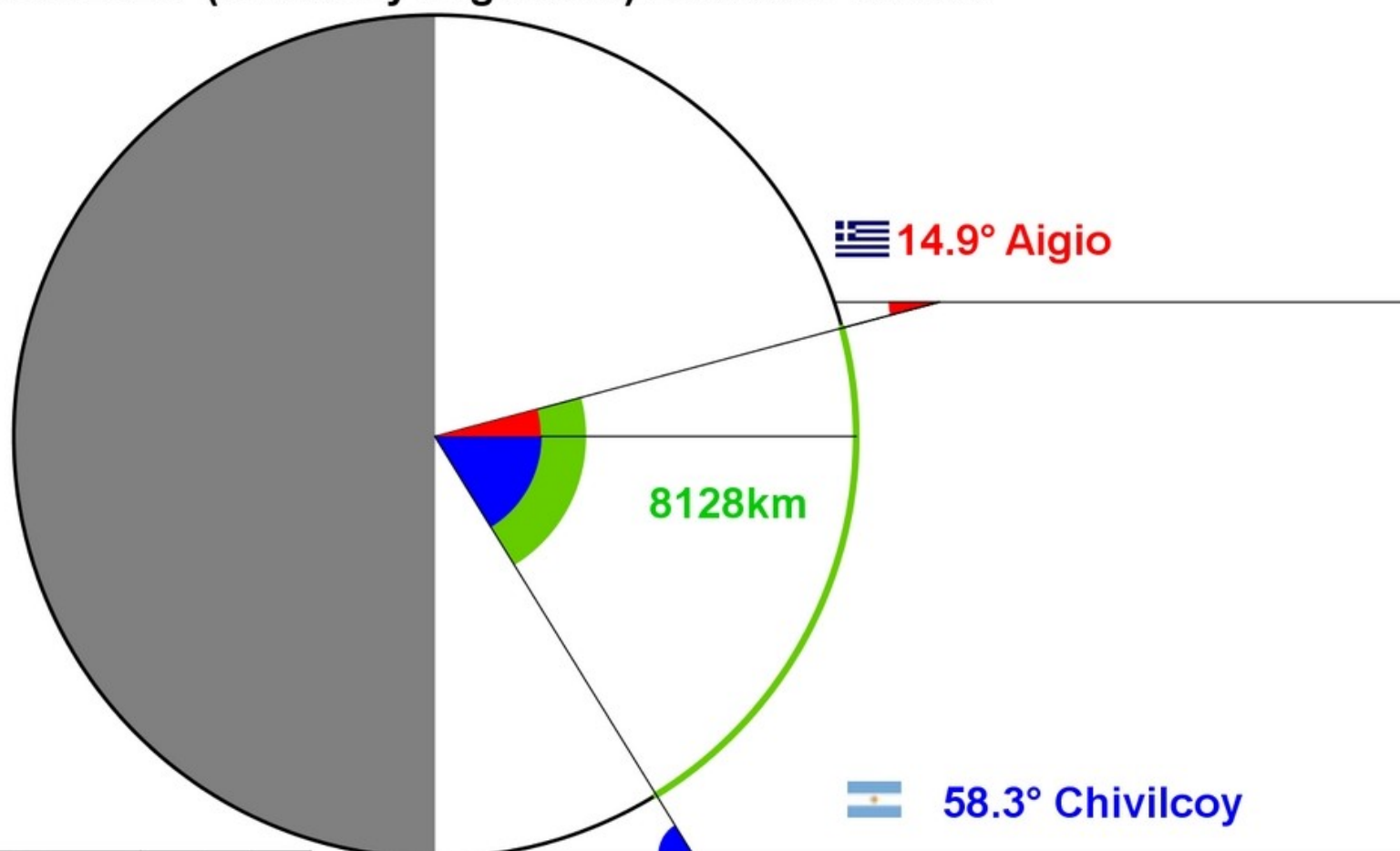


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079

Date	Gnomon	Shadow	Angle
18 June 2020	16.5cm	4.4cm	14.9°
21 June 2020	24.0cm	6.7cm	15.6°

18/06/2020 (Aigio-Greece) Latitude: 38.252°

18/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°



$$\text{circumference} = \frac{360^\circ \times 8128\text{km}}{14.9^\circ + 58.3^\circ} = 39974 \text{ km}$$

Distance	Angle
circumference	360°
8128km	14.9° + 58.3°



Alta Gracia, Argentina

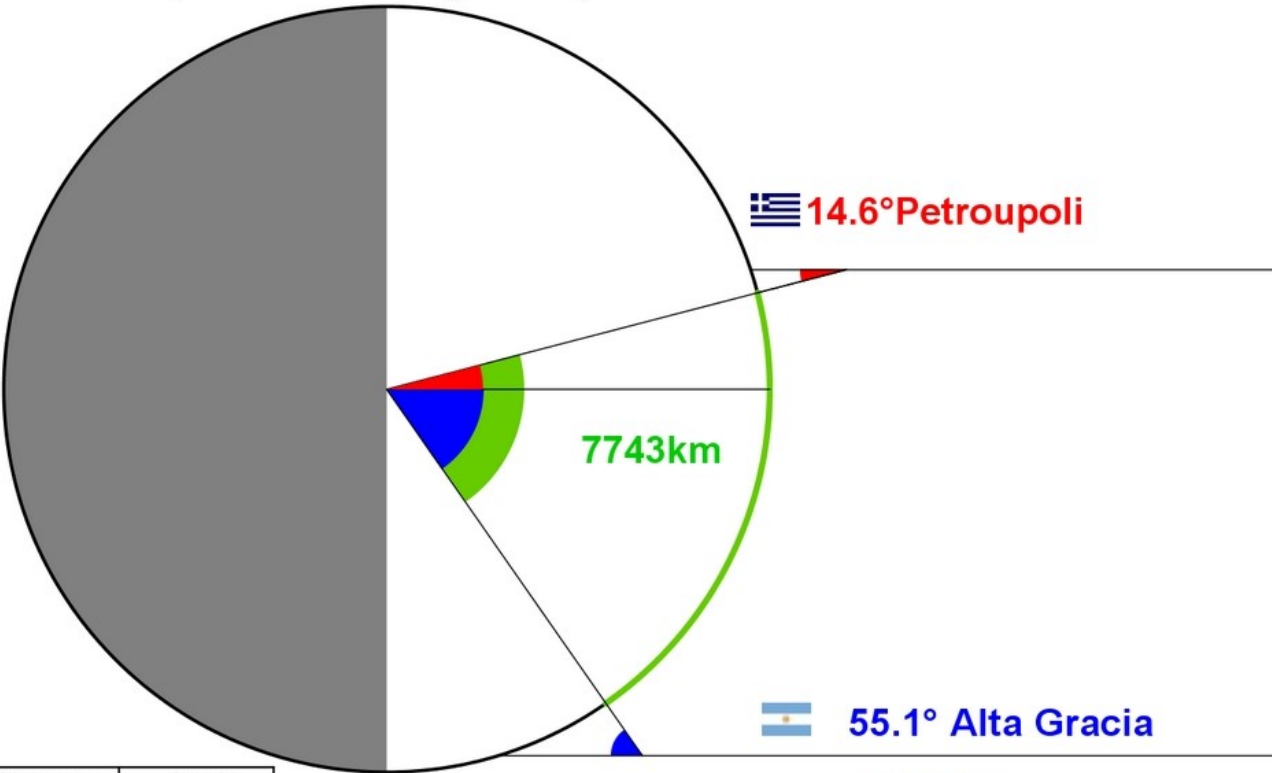


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Alta Gracia	Argentina	Fundación Caminos de Anisacate	-31.659	-64.417

Date	Gnomon	Shadow	Angle
01 June 2020	35.0cm	-47.5cm	-53.6°
02 June 2020	35.0cm	-47.5cm	-53.6°
05 June 2020	35.0cm	-48.2cm	-54.0°
06 June 2020	35.0cm	-48.4cm	-54.1°
08 June 2020	35.0cm	-49.0cm	-54.5°
11 June 2020	35.0cm	-49.3cm	-54.6°
15 June 2020	35cm	-49.4cm	-54.7°
18 June 2020	35.0cm	-49.1cm	-54.5°
19 June 2020	35cm	-50.9cm	-55.5°
20 June 2020	22.0cm	-31.8cm	-55.3°
21 June 2020	22.3cm	-32cm	-55.1°
22 June 2020	22.30cm	-32cm	-55.1°
25 June 2020	22.3cm	-31.7cm	-54.9°
26 June 2020	22.3cm	-31.8cm	-55°
27 June 2020	22.3cm	-31.7cm	-54.9°

21/06/2020 (Petroupoli-Greece) Latitude: 38.036°

21/06/2020 (Alta Gracia-Argentina) Latitude: -31.659°



Distance	Angle
circumference	360°
7743km	14.6°+55.1°

circumference = $\frac{360^\circ \times 7743\text{km}}{14.6^\circ + 55.1^\circ} = 39993 \text{ km}$



Bayamón, Puerto Rico

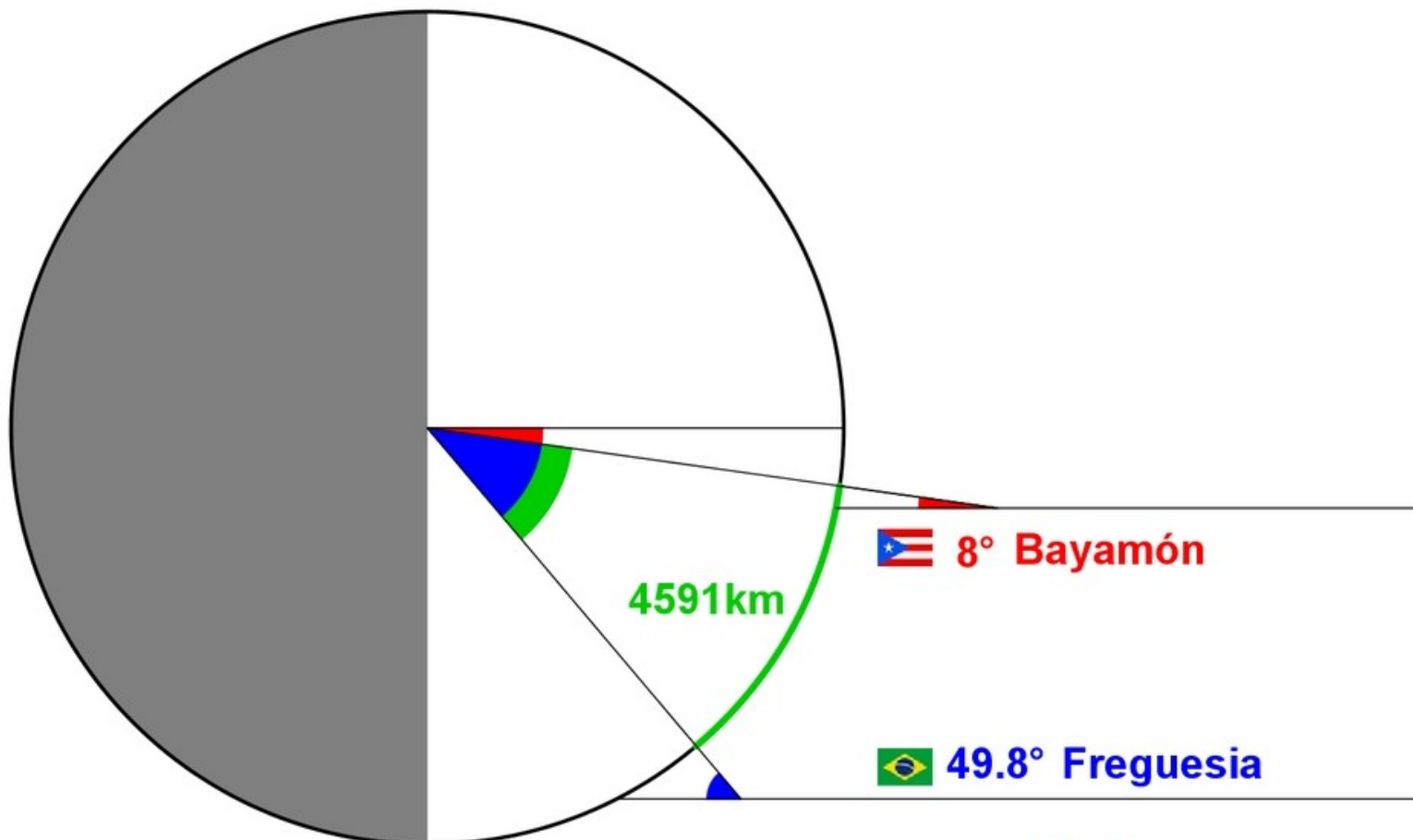


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Bayamón	Puerto Rico	AECM Carribean University	18.383	-66.168

Date	Gnomon	Shadow	Angle
20 June 2020	25cm	-3.5cm	-8°

20/06/2020 (Bayamón-Puerto Rico) Latitude: 18.383°

20/06/2020 (Freguesia-Brazil) Latitude: -22.943°



$$\text{circumference} = \frac{360^\circ \times 4591\text{km}}{49.8^\circ - 8^\circ} = 39540 \text{ km}$$

Distance	Angle
circumference	360°
4591km	49.8° - 8°



Buenos Aires, Argentina

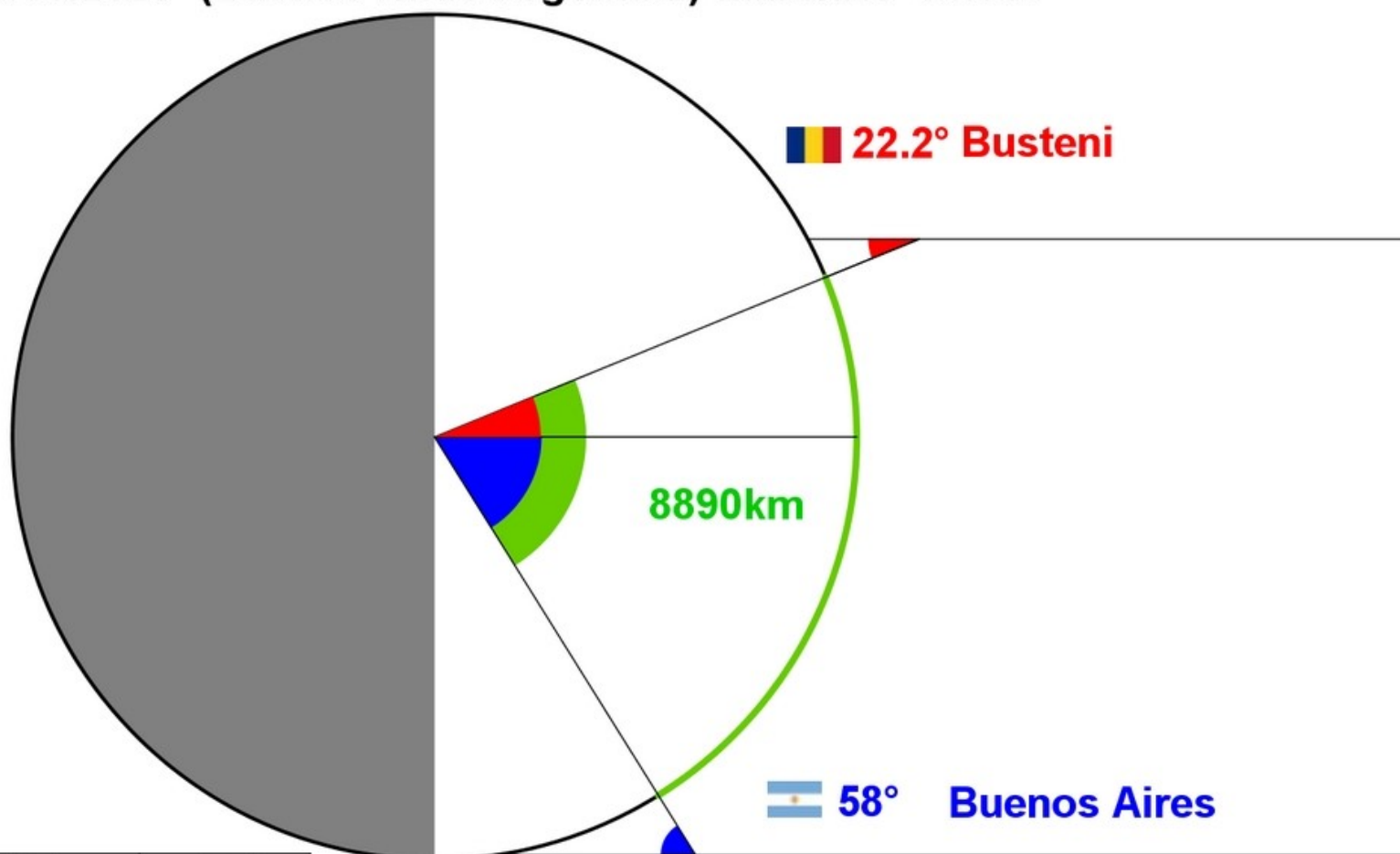


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Buenos Aires ENS1	Argentina	ENS N° 1	-34.455	-58.544

Date	Gnomon	Shadow	Angle
03 June 2020	7.5cm	-12.1cm	-58.2°
04 June 2020	7.5cm	-12.1cm	-58.2°
14 June 2020	7.5cm	-11.7cm	-57.3°
15 June 2020	7.5cm	-13.6cm	-61.1°
16 June 2020	7.5cm	-14.0cm	-61.8°
19 June 2020	7.5cm	-8.9cm	-49.9°
20 June 2020	6.0cm	-11.2cm	-61.8°
21 June 2020	7.5cm	-12.5cm	-59.0°
26 June 2020	7.5cm	-12.2cm	-58.4°
28 June 2020	7.5cm	-12cm	-58°

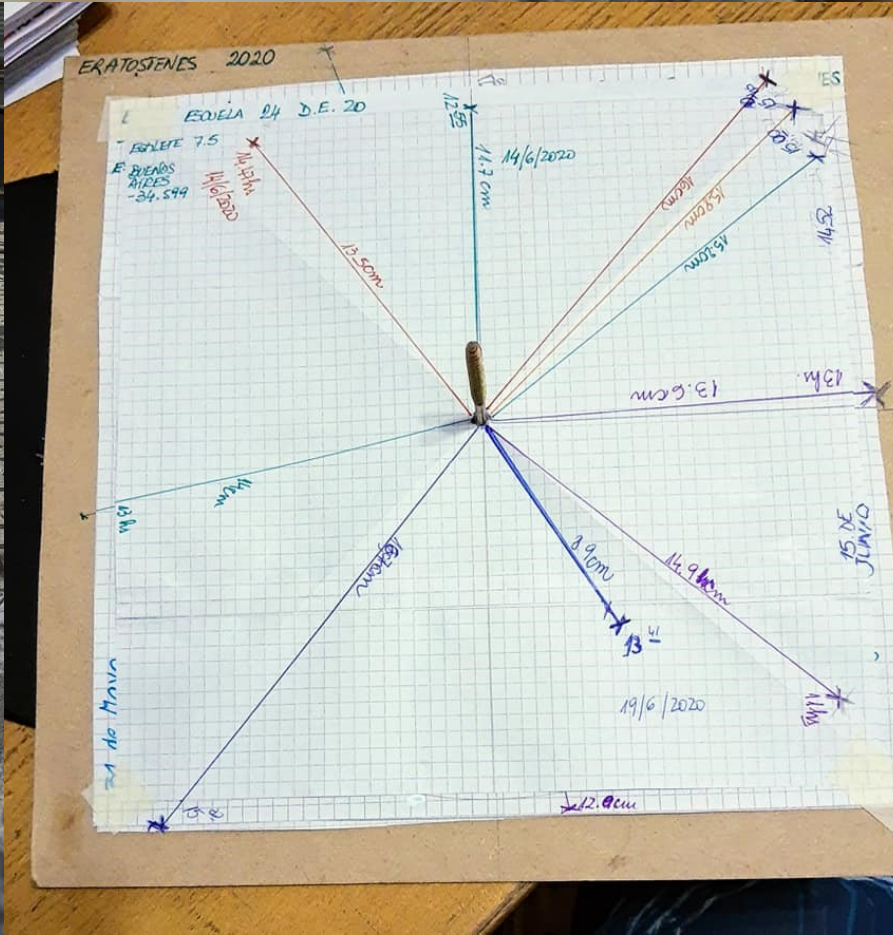
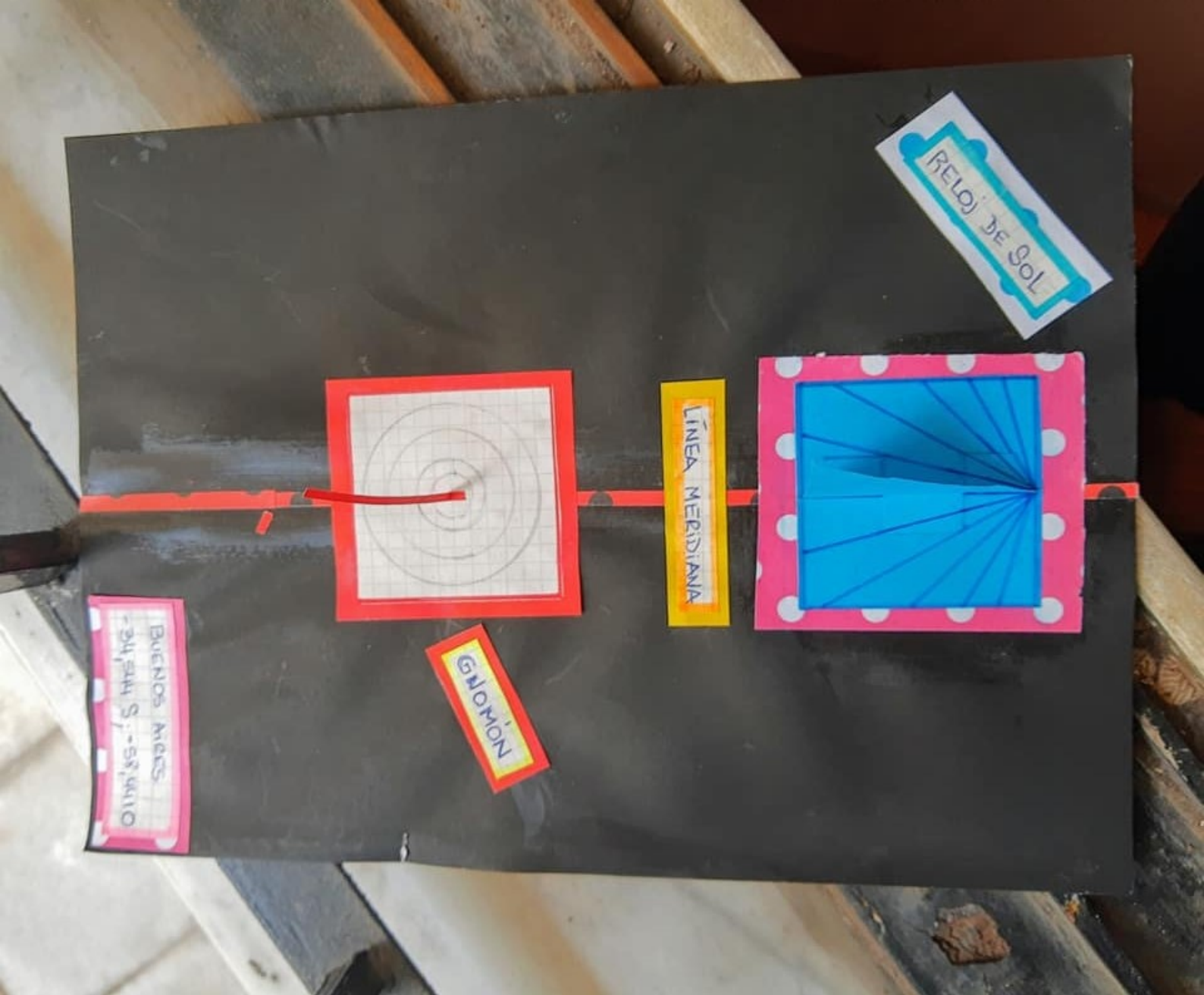
28/06/2020 (Busteni-Romania) Latitude: 45.416°

28/06/2020 (Buenos Aires-Argentina) Latitude: -34.599°



Distance	Angle
circumference	360°
8890km	22.2° + 58°

$$\text{circumference} = \frac{360^\circ \times 8890\text{km}}{22.2^\circ + 58^\circ} = 39905 \text{ km}$$



Busteni, Romania

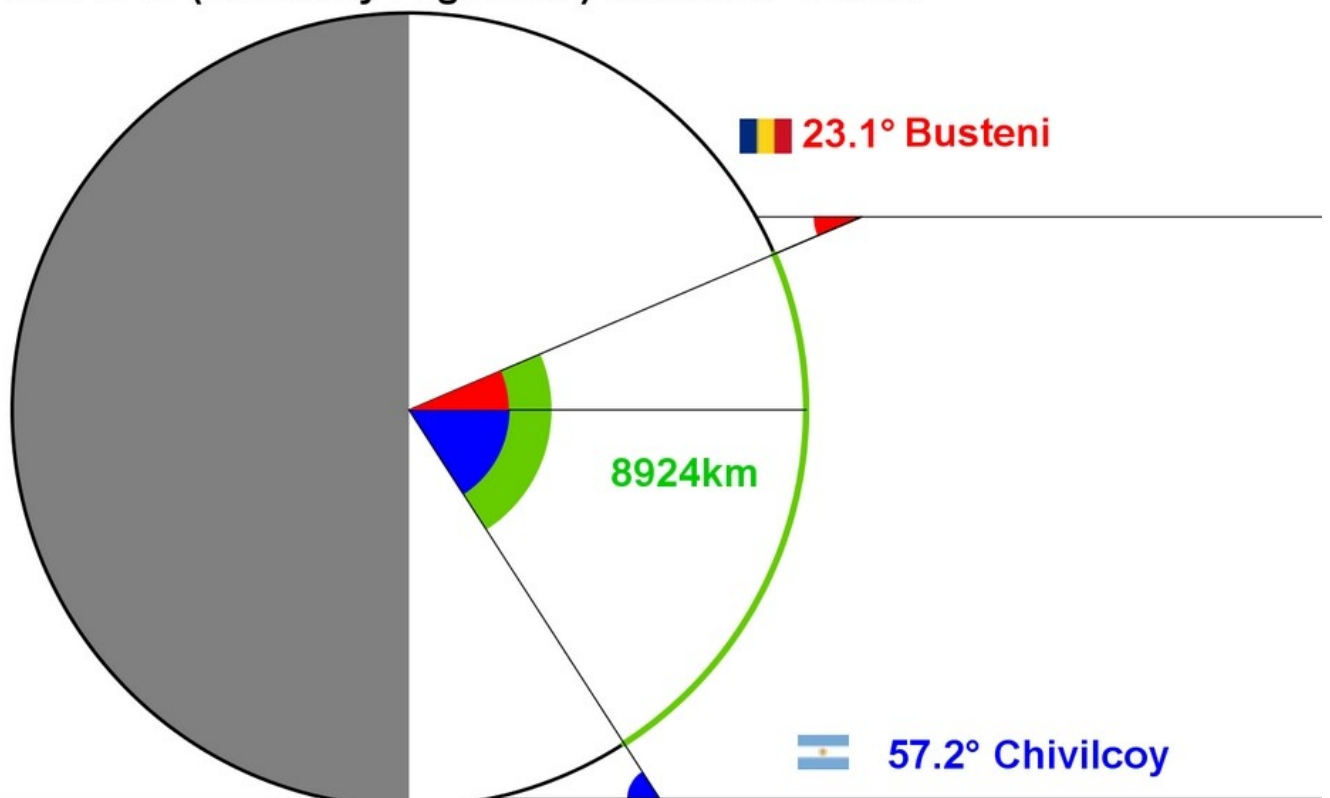


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535

Date	Gnomon	Shadow	Angle
02 June 2020	94.0cm	40.0cm	23.1°
03 June 2020	64cm	27cm	22.9°
04 June 2020	190.0cm	79.6cm	22.7°
05 June 2020	168.0cm	70.0cm	22.6°
06 June 2020	53.0cm	22.0cm	22.5°
08 June 2020	29.2cm	12.0cm	22.3°
09 June 2020	170.3cm	70.0cm	22.3°
12 June 2020	123.0cm	50.0cm	22.1°
14 June 2020	74.0cm	30.0cm	22.1°
17 June 2020	75.5cm	30.5cm	22.0°
18 June 2020	100cm	40.4cm	22°
19 June 2020	100cm	40.4cm	22°
20 June 2020	100cm	40.4cm	22°
21 June 2020	50cm	20.2cm	22°
23 June 2020	37cm	15cm	22.1°
24 June 2020	17.3cm	7cm	22°
25 June 2020	81.3cm	33cm	22.1°
26 June 2020	98.3cm	40cm	22.1°
27 June 2020	110.3cm	45cm	22.2°
28 June 2020	82cm	33.5cm	22.2°
29 June 2020	48.6cm	20cm	22.4°
30 June 2020	68cm	28cm	22.4°

02/06/2020 (Busteni-Romania) Latitude: 45.416°

02/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°



Distance	Angle
circumference	360°
8924km	23.1° + 57.2°

$$\text{circumference} = \frac{360^\circ \times 8924\text{km}}{23.1^\circ + 57.2^\circ} = 40008 \text{ km}$$



Chivilcoy, Argentina

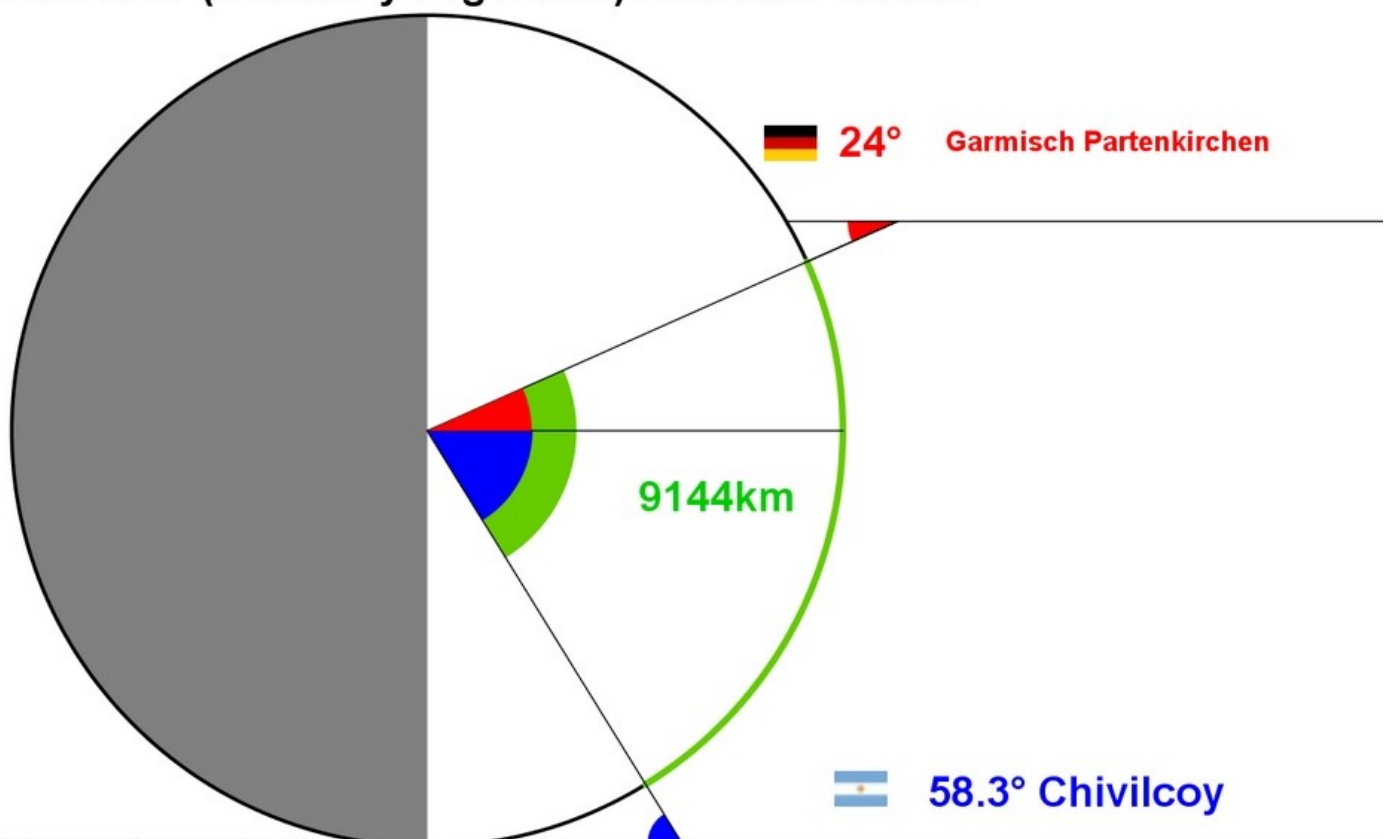


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Chivilcoy	Argentina	Parque Cielos del Sur	-34.911	-60.014

Date	Gnomon	Shadow	Angle
01 June 2020	18.2cm	-28.0cm	-57.0°
02 June 2020	47.4cm	-73.5cm	-57.2°
03 June 2020	45.7cm	-71.5cm	-57.4°
04 June 2020	45.7cm	-71.5cm	-57.4°
05 June 2020	45.7cm	-71.8cm	-57.5°
09 June 2020	17.8cm	-28.4cm	-57.9°
13 June 2020	14.9cm	-24.0cm	-58.2°
14 June 2020	19.3cm	-31.1cm	-58.2°
15 June 2020	19cm	-29.6cm	-57.3°
17 June 2020	20.9cm	-33.9cm	-58.3°
18 June 2020	20.7cm	-33.5cm	-58.3°
20 June 2020	20cm	-32.5cm	-58.4°
21 June 2020	21.1cm	-34.1cm	-58.3°
22 June 2020	20.8cm	-33.7cm	-58.3°
25 June 2020	21.3cm	-34.3cm	-58.2°
26 June 2020	22.8cm	-36.7cm	-58.1°
29 June 2020	19.9cm	-32cm	-58.1°

17/06/2020 (Garmisch Partenkirchen-Germany) Latitude: 47.394°

17/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°



Distance	Angle
circumference	360°
9144km	24° + 58.3°

$$\text{circumference} = \frac{360^\circ \times 9144\text{km}}{24^\circ + 58.3^\circ} = 39998 \text{ km}$$



Dorohoi, Romania

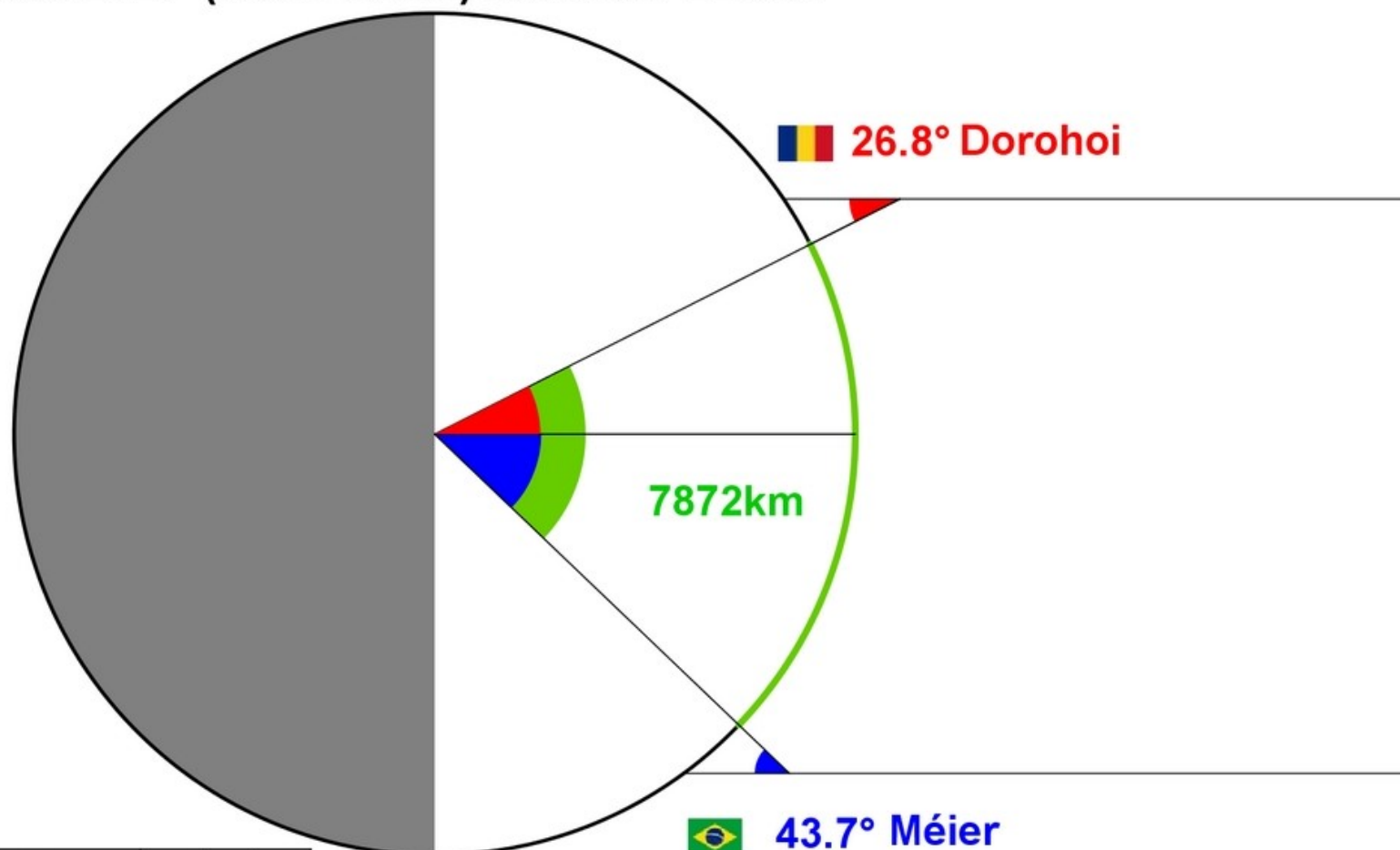


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Dorohoi	Romania	Grigore Ghica National College	47.953	26.394

Date	Gnomon	Shadow	Angle
17 June 2020	158cm	78cm	26.3°
19 June 2020	53.2cm	25cm	25.2°
20 June 2020	119cm	60cm	26.8°
21 June 2020	21cm	11cm	27.6°
22 June 2020	140cm	67cm	25.6°
23 June 2020	14.0cm	7.0cm	26.6°
24 June 2020	16cm	8cm	26.6°
25 June 2020	36cm	18cm	26.6°
28 June 2020	24cm	12cm	26.6°
29 June 2020	8cm	4cm	26.6°

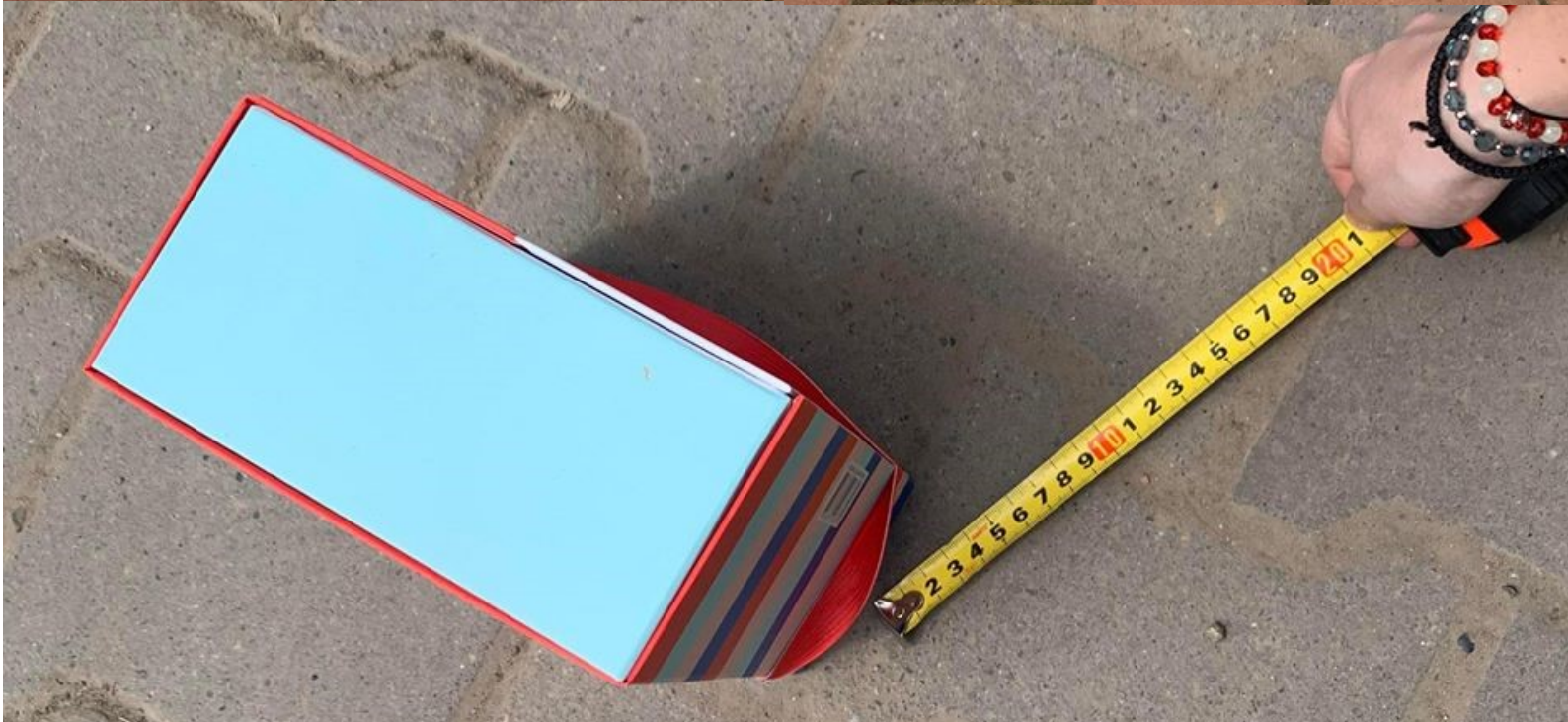
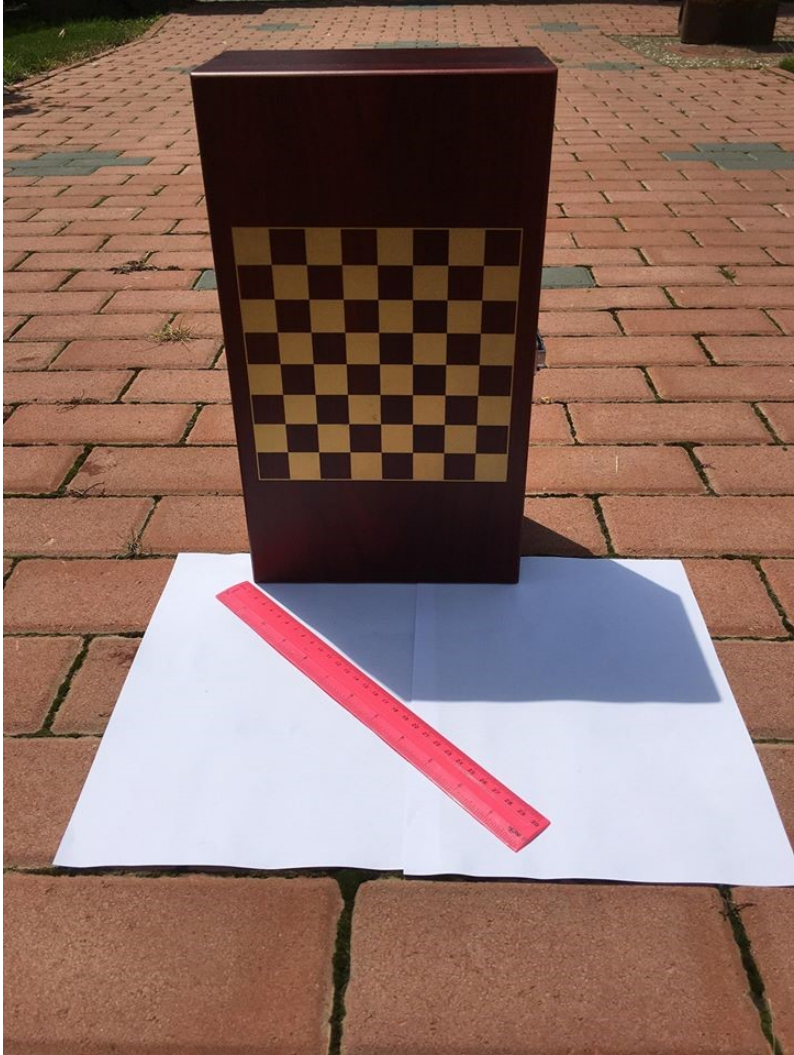
20/06/2020 (Dorohoi-Romania) Latitude: 47.953°

20/06/2020 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
7872km	26.8°+43.7°

$$\text{circumference} = \frac{360^\circ \times 7872\text{km}}{26.8^\circ + 43.7^\circ} = 40197 \text{ km}$$



Duque de Caxias, Brazil

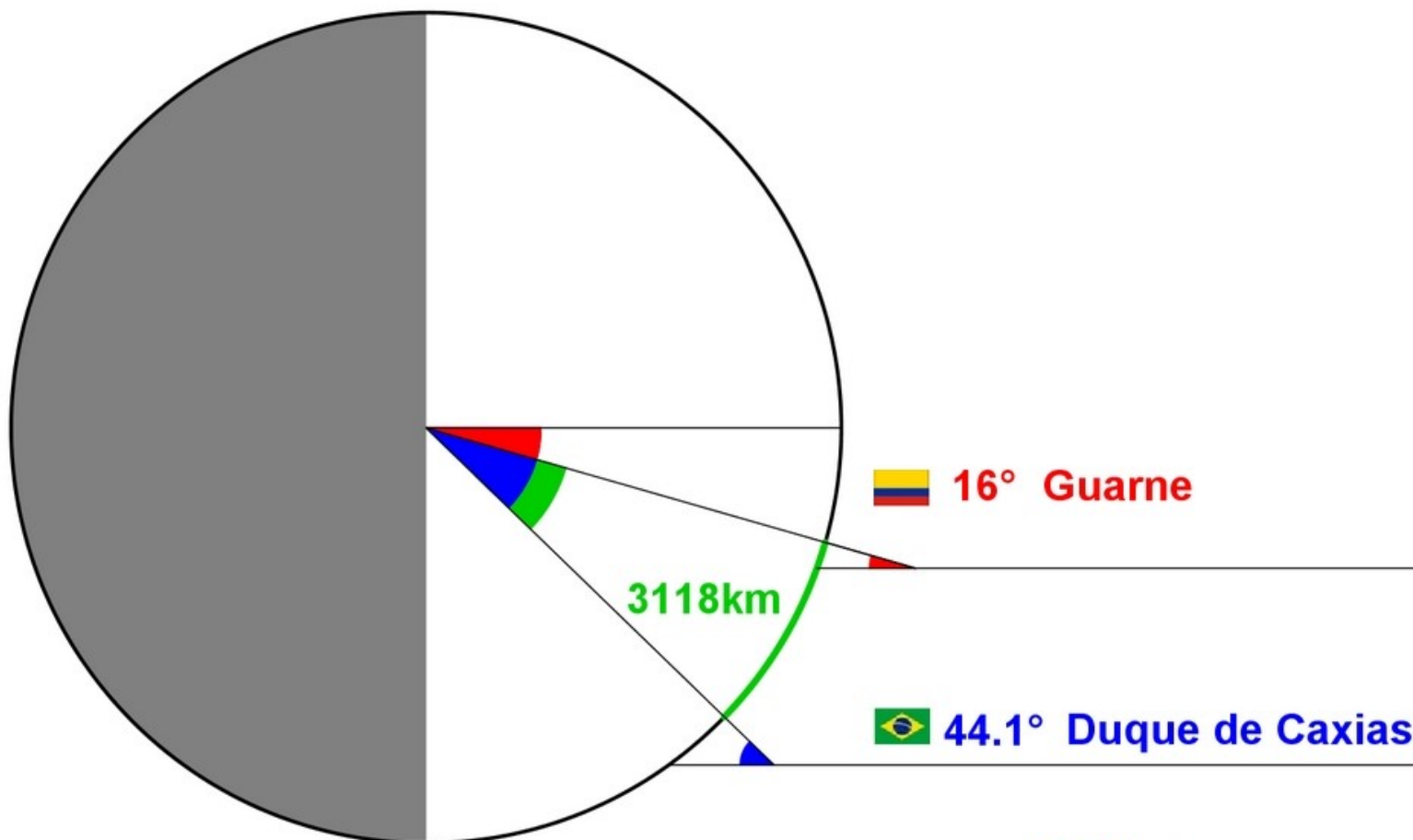


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Duque de Caxias	Brazil	Complexo Cultural Caça Talentos	-21.791	-43.327

Date	Gnomon	Shadow	Angle
01 June 2020	16.0cm	-15.5cm	-44.1°
20 June 2020	16cm	-16.5cm	-45.9°

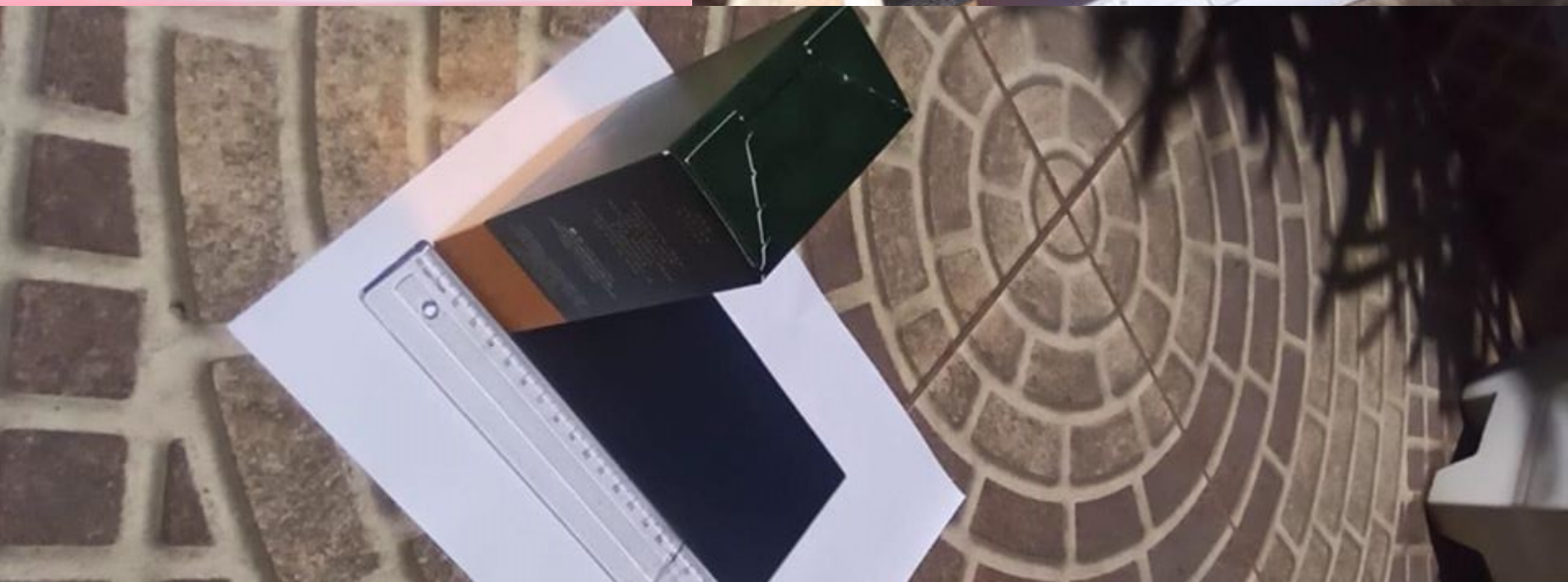
01/06/2020 (Guarne-Colombia) Latitude: 6.274°

01/06/2020 (Duque de Caxias-Brazil) Latitude: -21.791°



$$\text{circumference} = \frac{360^\circ \times 3118\text{km}}{44.1^\circ - 16^\circ} = 39946 \text{ km}$$

Distance	Angle
circumference	360°
3118km	44.1° - 16°



Freguesia, Brazil

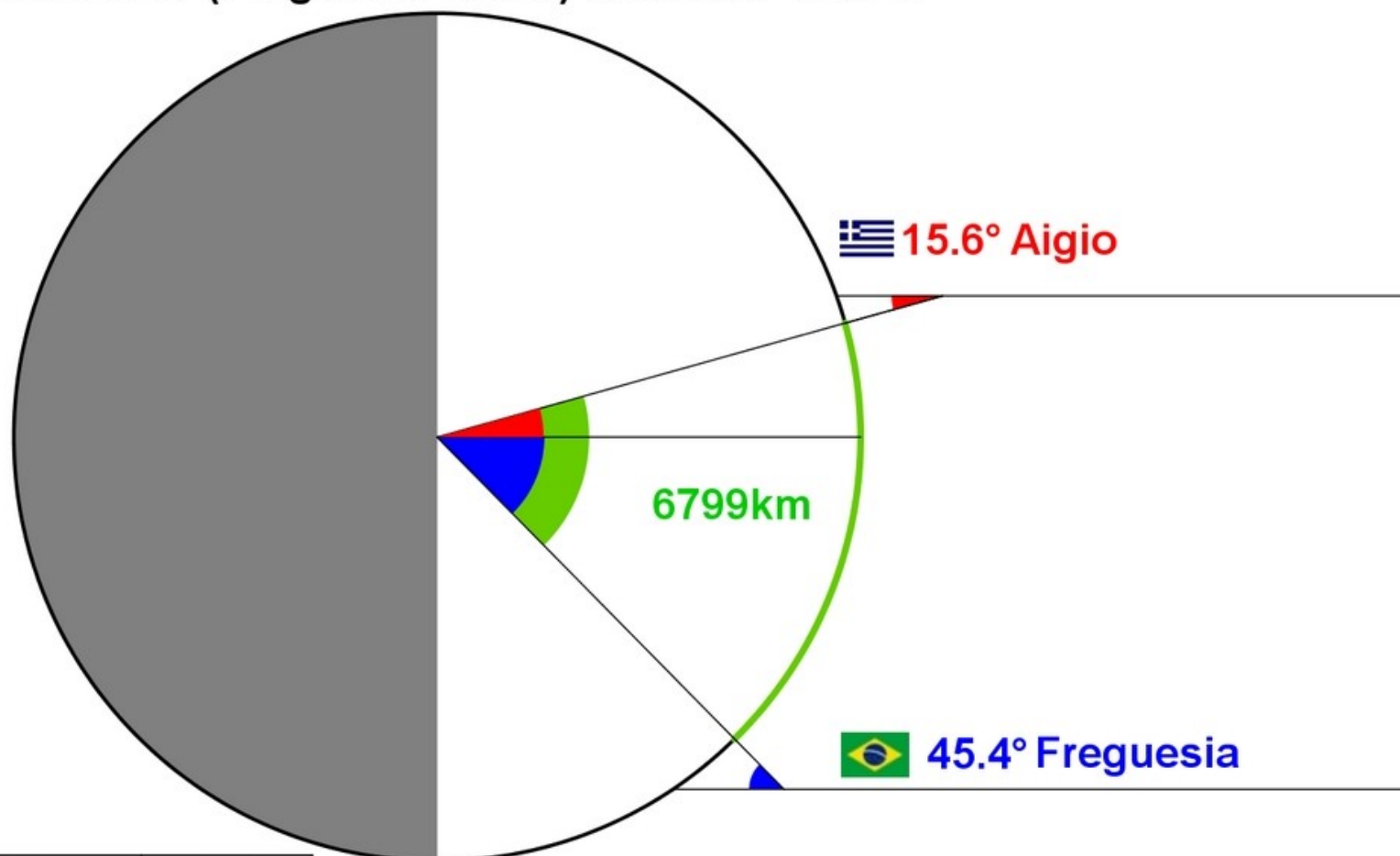


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Freguesia	Brazil	Instituto Presbiteriano Álvaro Reis	-22.943	-43.356

Date	Gnomon	Shadow	Angle
19 June 2020	35cm	-34cm	-44.2°
20 June 2020	33.0cm	-39.0cm	-49.8°
21 June 2020	148.0cm	-150.0cm	-45.4°

21/06/2020 (Aigio-Greece) Latitude: 38.252°

21/06/2020 (Freguesia-Brazil) Latitude: -22.943°



Distance	Angle
circumference	360°
6799km	15.6° + 45.4°

$$\text{circumference} = \frac{360^\circ \times 6799\text{km}}{15.6^\circ + 45.4^\circ} = 40125 \text{ km}$$



Garmisch Partenkirchen, Germany

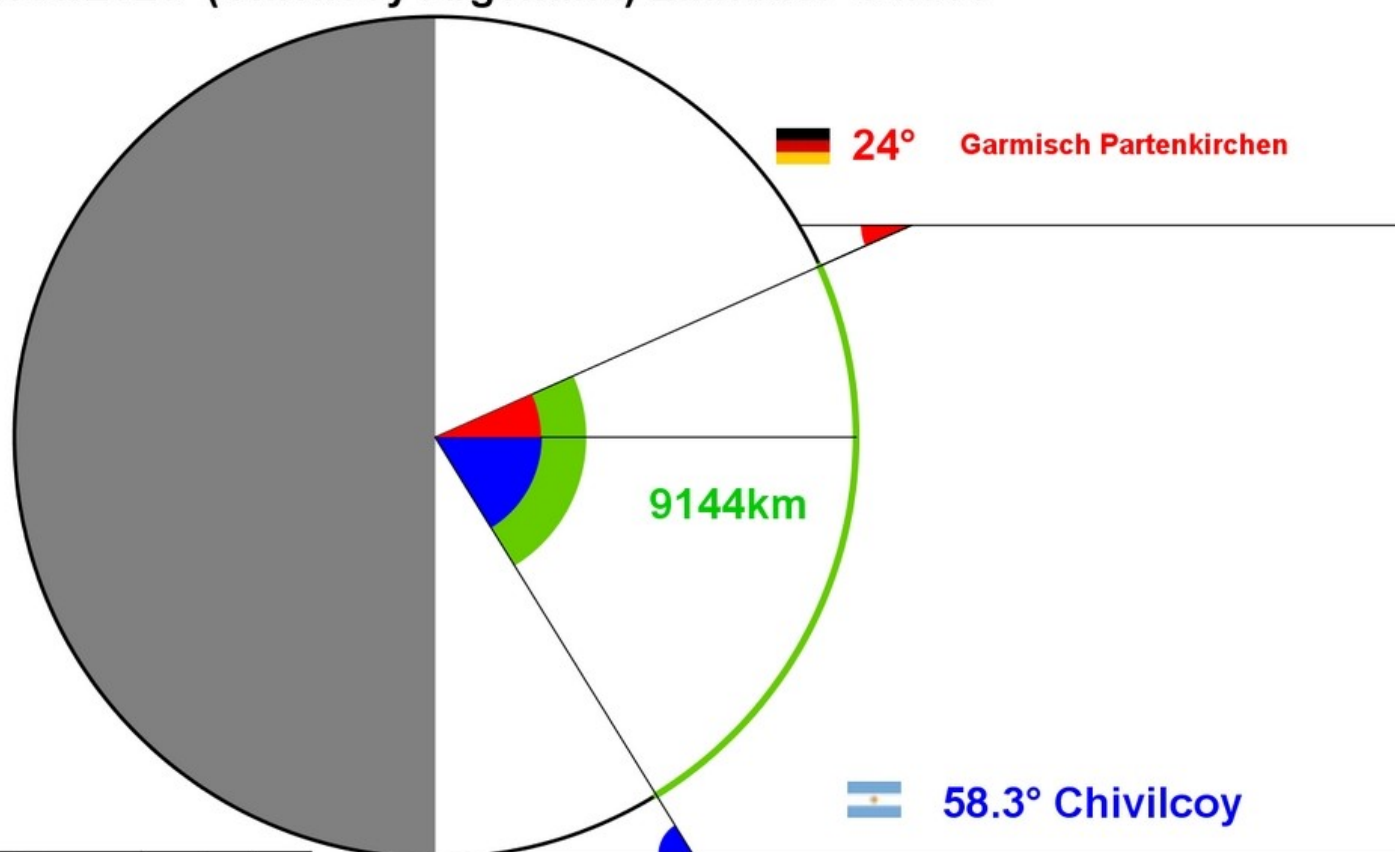


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Garmisch Partenkirchen	Germany	St.-Irmengard-Gymnasium	47.493	11.102

Date	Gnomon	Shadow	Angle
01 June 2020	93.0cm	44.7cm	25.7°
02 June 2020	194.0cm	91.0cm	25.1°
03 June 2020	93cm	44.5cm	25.6°
05 June 2020	101.0cm	46.5cm	24.7°
08 June 2020	191.0cm	87.0cm	24.5°
11 June 2020	104.0cm	47.0cm	24.3°
12 June 2020	104.0cm	46.5cm	24.1°
13 June 2020	107.0cm	48.0cm	24.2°
17 June 2020	128.0cm	57.0cm	24.0°
18 June 2020	232.0cm	104.0cm	24.1°
22 June 2020	93cm	41.5cm	24°
23 June 2020	130cm	58cm	24°
24 June 2020	107cm	48cm	24.2°
27 June 2020	93cm	42cm	24.3°
28 June 2020	203cm	91.5cm	24.3°
30 June 2020	70cm	32cm	24.6°

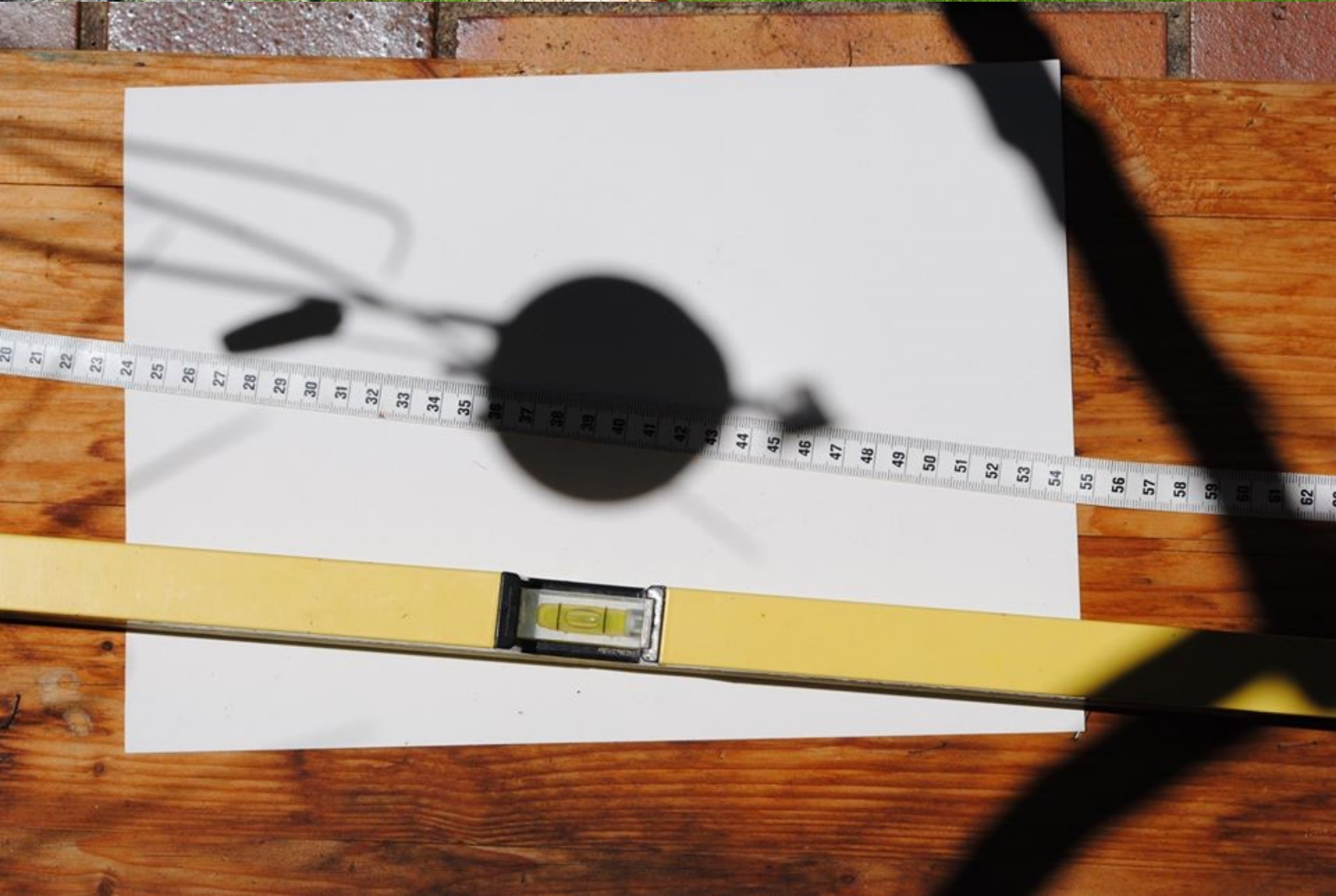
17/06/2020 (Garmisch Partenkirchen-Germany) Latitude: 47.394°

17/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°



Distance	Angle
circumference	360°
9144km	24° + 58.3°

$$\text{circumference} = \frac{360^\circ \times 9144\text{km}}{24^\circ + 58.3^\circ} = 39998 \text{ km}$$



Guarne, Colombia

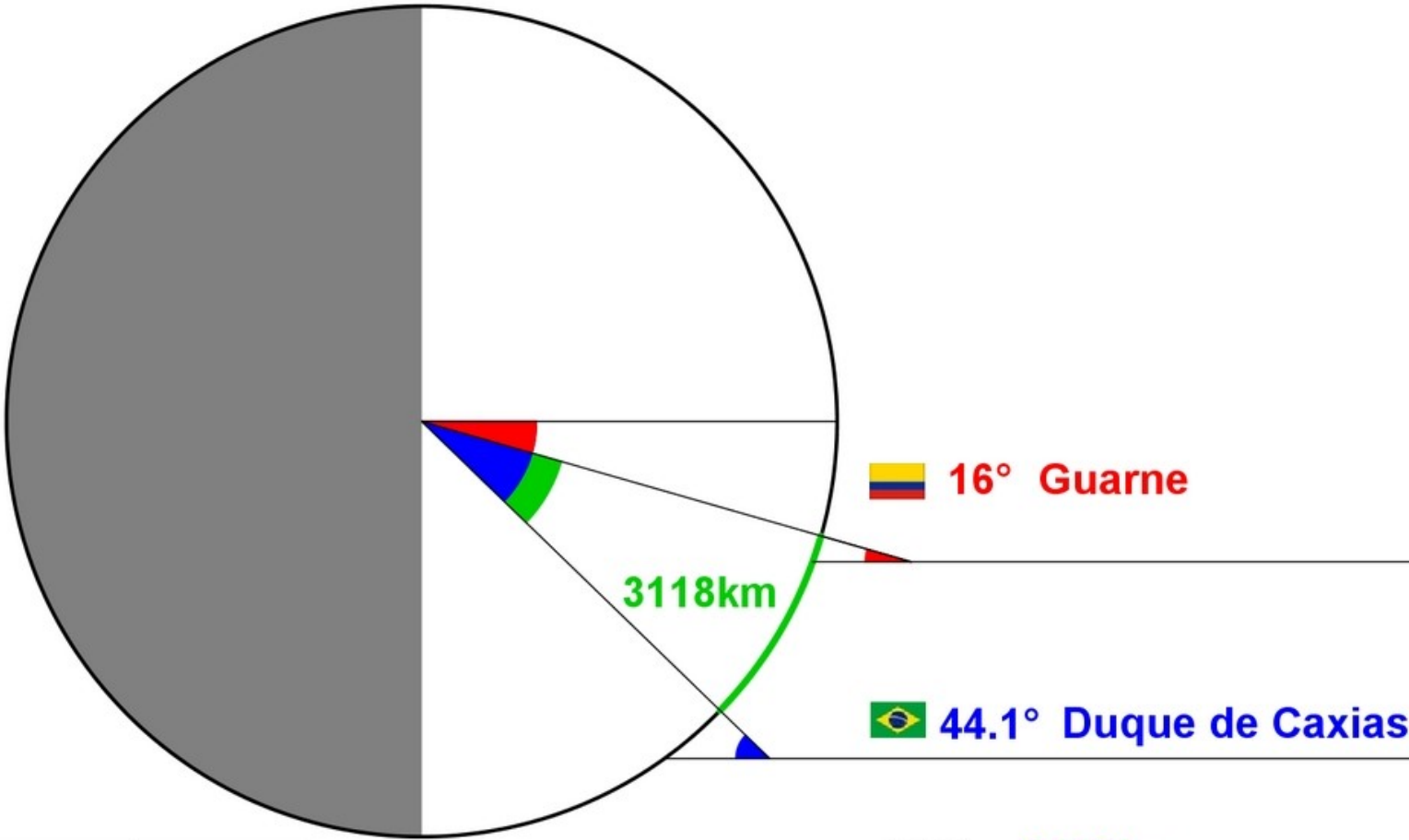


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449

Date	Gnomon	Shadow	Angle
01 June 2020	12.9cm	-3.7cm	-16.0°
16 June 2020	61cm	-18.9cm	-17.2°
19 June 2020	11.9cm	-3.7cm	-17.3°
20 June 2020	11.9cm	-3.7cm	-17.3°
21 June 2020	11.9cm	-2.4cm	-11.4°
29 June 2020	7.8cm	-2.3cm	-16.4°

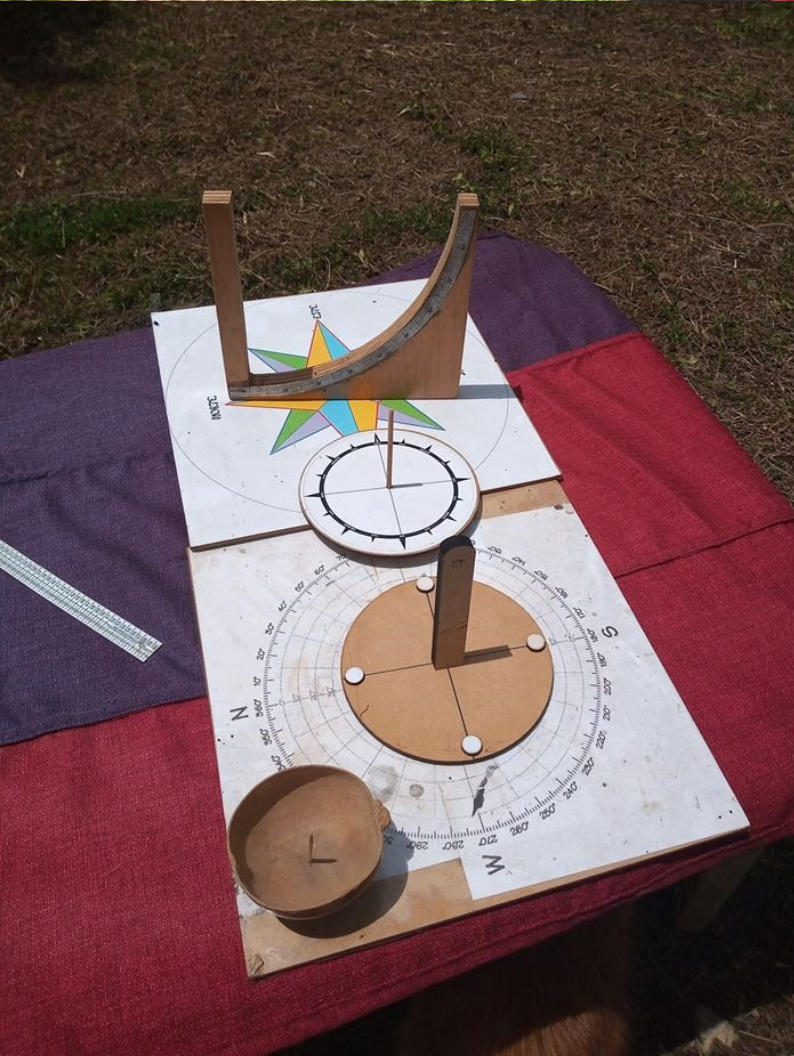
01/06/2020 (Guarne-Colombia) Latitude: 6.274°

01/06/2020 (Duque de Caxias-Brazil) Latitude: -21.791°



Distance	Angle
circumference	360°
3118km	44.1° - 16°

circumference = $\frac{360^\circ \times 3118\text{km}}{44.1^\circ - 16^\circ} = 39946 \text{ km}$



Ilion, Greece

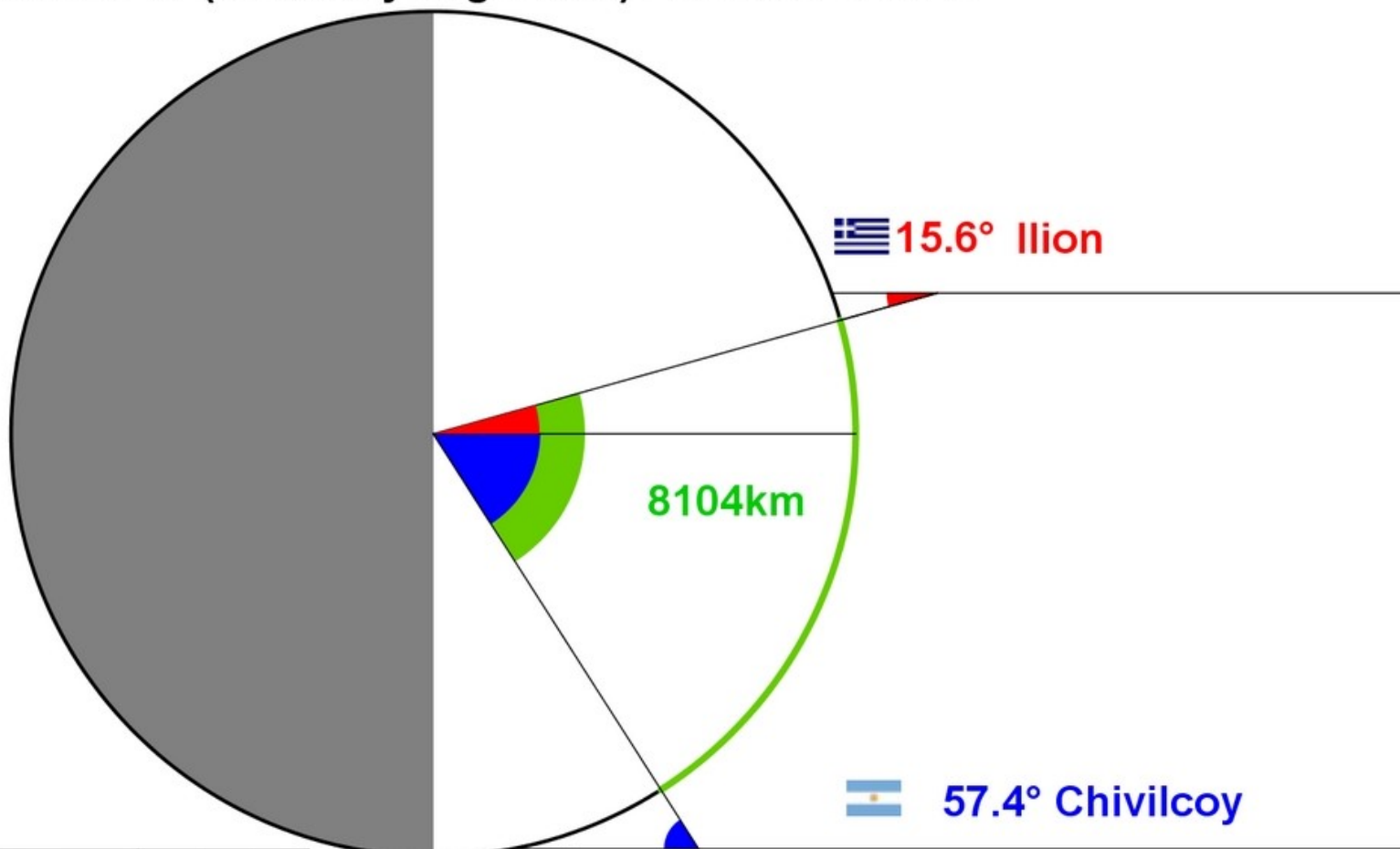


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Ilion	Greece	11th JuniorHigh School of Ilion	38.033	23.697

Date	Gnomon	Shadow	Angle
03 June 2020	40cm	11.2cm	15.6°
05 June 2020	40.0cm	10.9cm	15.2°
11 June 2020	250.0cm	67.0cm	15.0°
15 June 2020	120.0cm	32.0cm	14.9°

03/06/2020 (Ilion-Greece) Latitude: 38.033°

03/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°



$$\text{circumference} = \frac{360^\circ \times 8104\text{km}}{15.6^\circ + 57.4^\circ} = 39965 \text{ km}$$

Distance	Angle
circumference	360°
8104km	15.6° + 57.4°



Ioannina, Greece

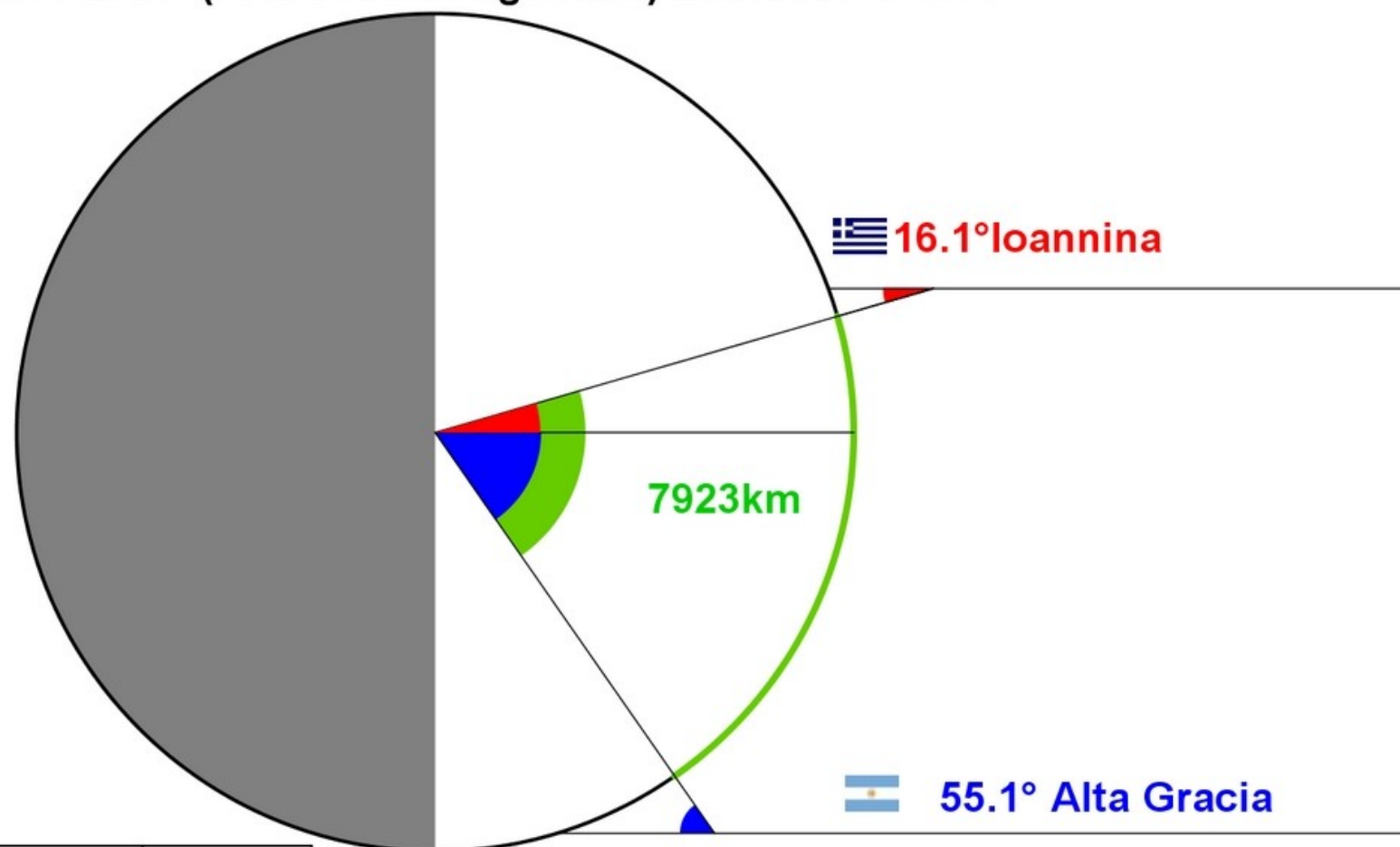


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Ioannina	Greece	Experimental College	39.655	20.846

Date	Gnomon	Shadow	Angle
21 June 2020	100.0cm	28.8cm	16.1°

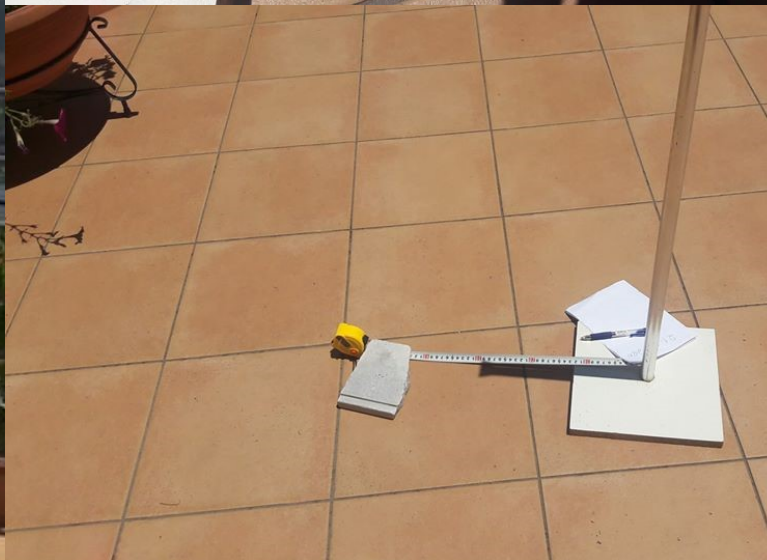
21/06/2020 (Ioannina-Greece) Latitude: 39.655°

21/06/2020 (Alta Gracia-Argentina) Latitude: -31.659°



Distance	Angle
circumference	360°
7923km	16.1° + 55.1°

$$\text{circumference} = \frac{360^\circ \times 7923\text{km}}{16.1^\circ + 55.1^\circ} = 40060 \text{ km}$$



Irajá, Brazil

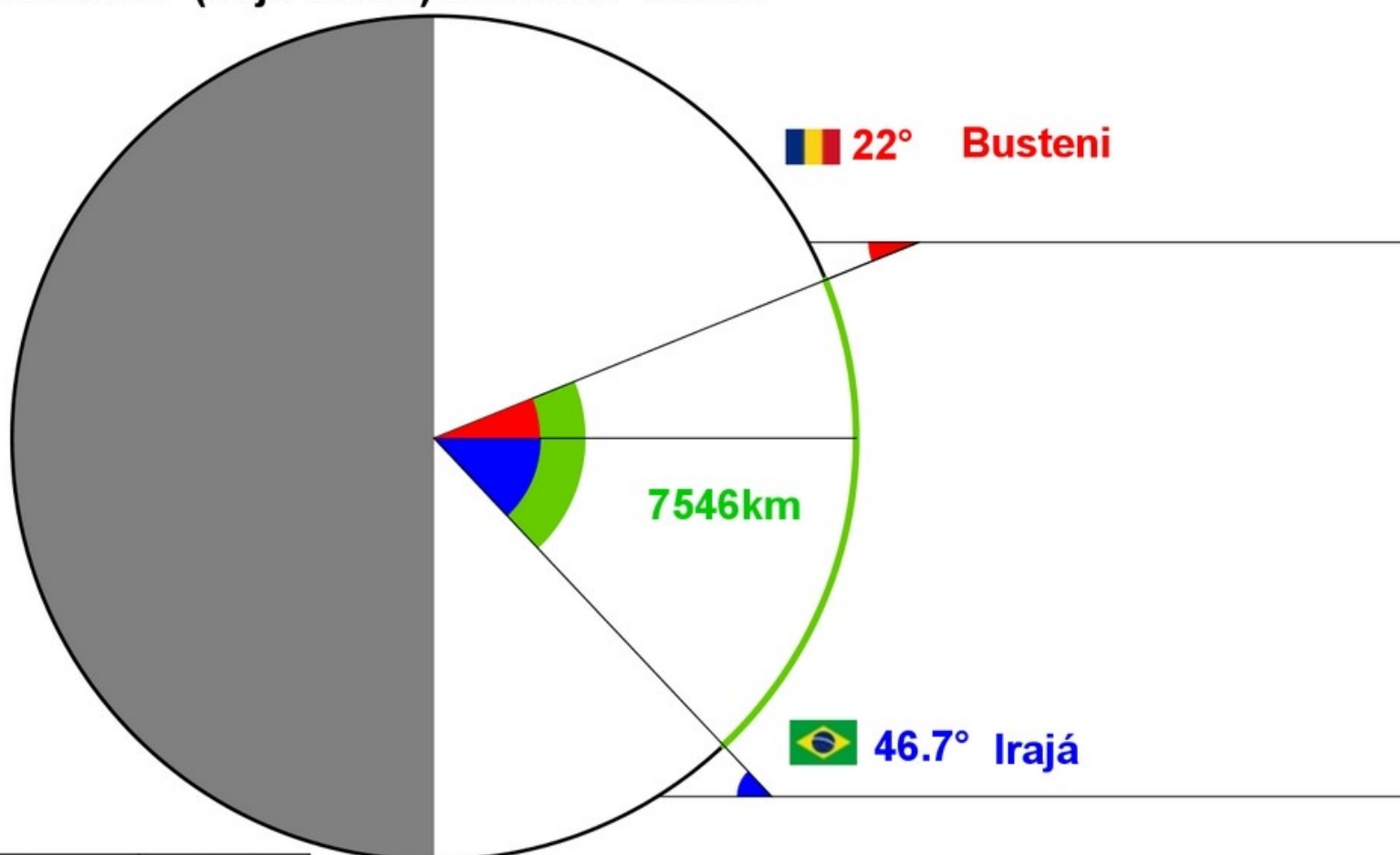


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Irajá	Brazil	IFRJ. instituto Federal do Rio de Janeiro	-22.501	-43.195

Date	Gnomon	Shadow	Angle
18 June 2020	100.0cm	-106.0cm	-46.7°

18/06/2020 (Busteni-Romania) Latitude: 45.416°

18/06/2020 (Irajá-Brazil) Latitude: -22.501°



$$\text{circumference} = \frac{360^\circ \times 7546\text{km}}{22^\circ + 46.7^\circ} = 39542 \text{ km}$$

Distance	Angle
circumference	360°
7546km	22° + 46.7°



Lafrançaise, France

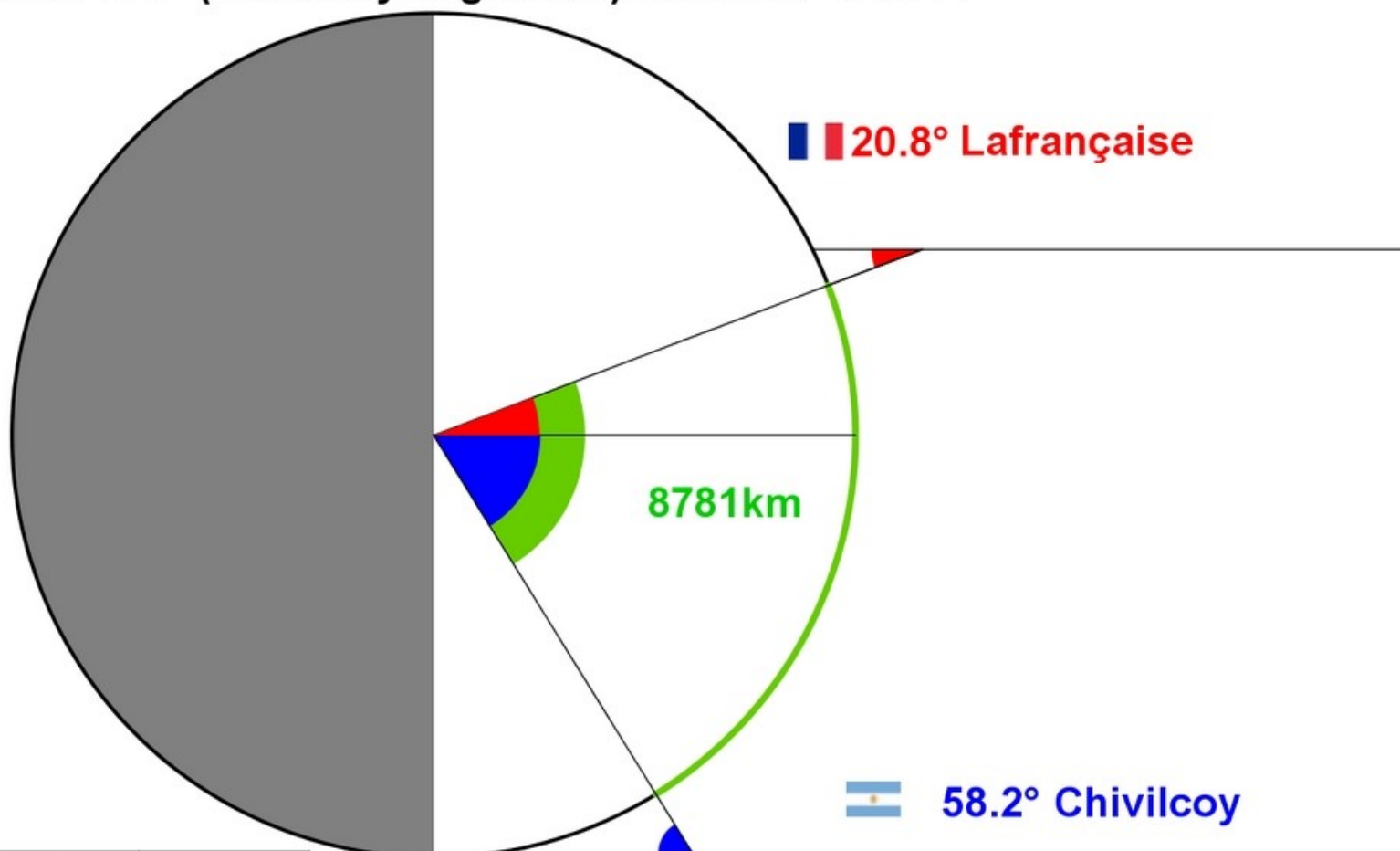


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237

Date	Gnomon	Shadow	Angle
05 June 2020	12.5cm	4.9cm	21.4°
12 June 2020	100.0cm	38.1cm	20.9°
14 June 2020	100.0cm	37.9cm	20.8°
18 June 2020	12.5cm	5.0cm	21.8°
20 June 2020	100cm	37.8cm	20.7°
25 June 2020	12.5cm	4.8cm	21°

14/06/2020 (Lafrançaise-France) Latitude: 44.127°

14/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°



$$\text{circumference} = \frac{360^\circ \times 8781\text{km}}{20.8^\circ + 58.2^\circ} = 40015 \text{ km}$$

Distance	Angle
circumference	360°
8781km	20.8° + 58.2°



Lozova, Ukraine

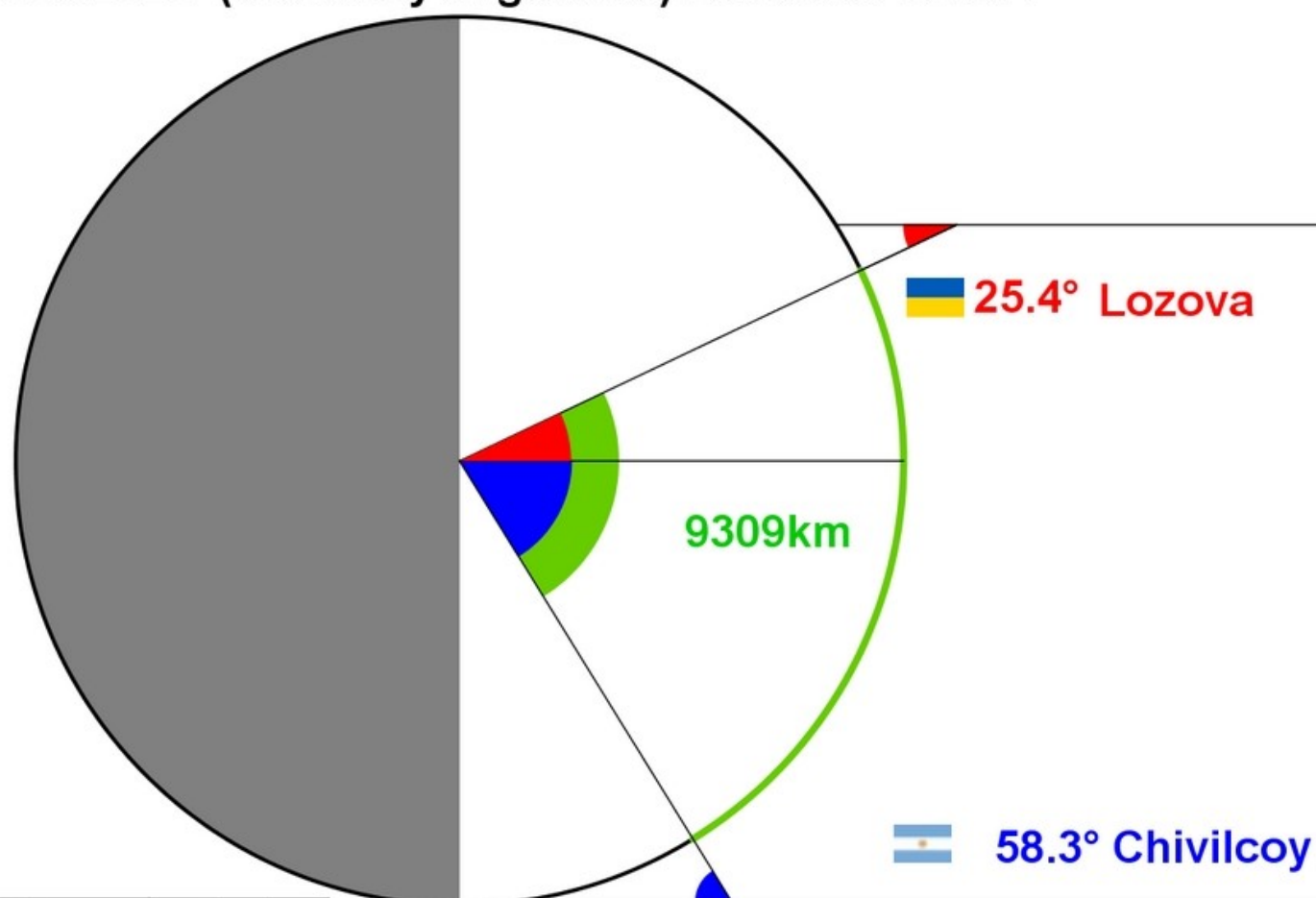


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Lozova	Ukraine	Lozova Secondary School № 12	48.881	36.291

Date	Gnomon	Shadow	Angle
17 June 2020	60cm	28.5cm	25.4°

17/06/2020 (Lozova-Ukraine) Latitude: 48.881°

17/06/2020 (Chivilcoy-Argentina) Latitude: -34.911°

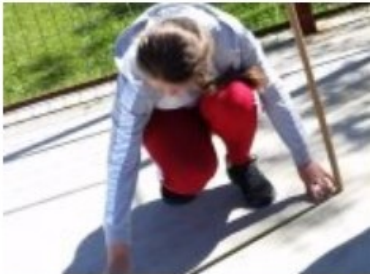


Distance	Angle
circumference	360°
9309km	25.4° + 58.3°

$$\text{circumference} = \frac{360^\circ \times 9309\text{km}}{25.4^\circ + 58.3^\circ} = 40039 \text{ km}$$



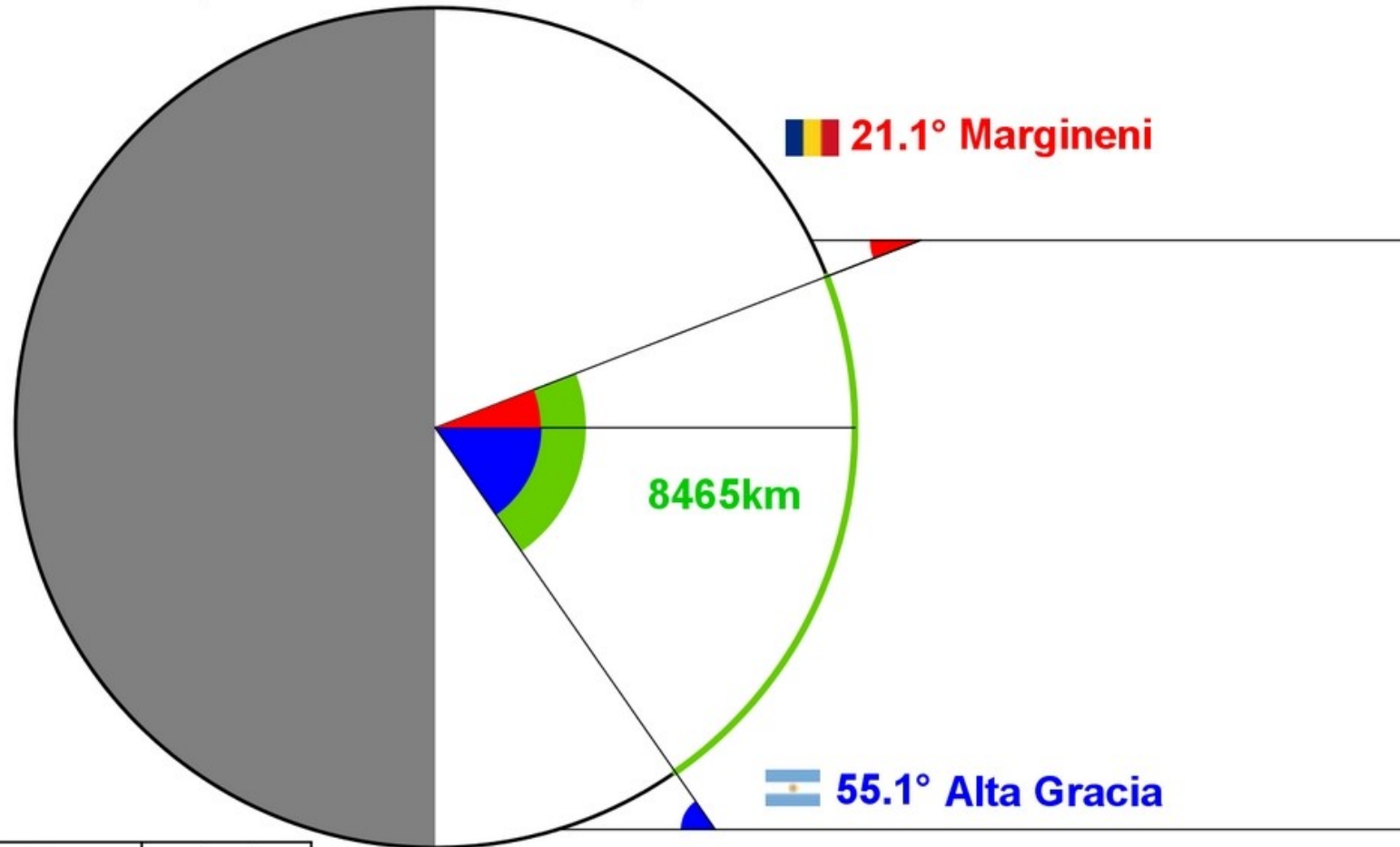
Margineni, Romania



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

Date	Gnomon	Shadow	Angle
20 June 2020	100cm	38.8cm	21.2°
21 June 2020	100cm	38.6cm	21.1°

21/06/2020 (Margineni-Romania) Latitude: 44.533°
21/06/2020 (Alta Gracia-Argentina) Latitude: -31.659°



Distance	Angle
circumference	360°
8465km	21.1°+ 55.1°

circumference = $\frac{360^\circ \times 8465\text{km}}{21.1^\circ + 55.1^\circ} = 39992 \text{ km}$



Méier, Brazil

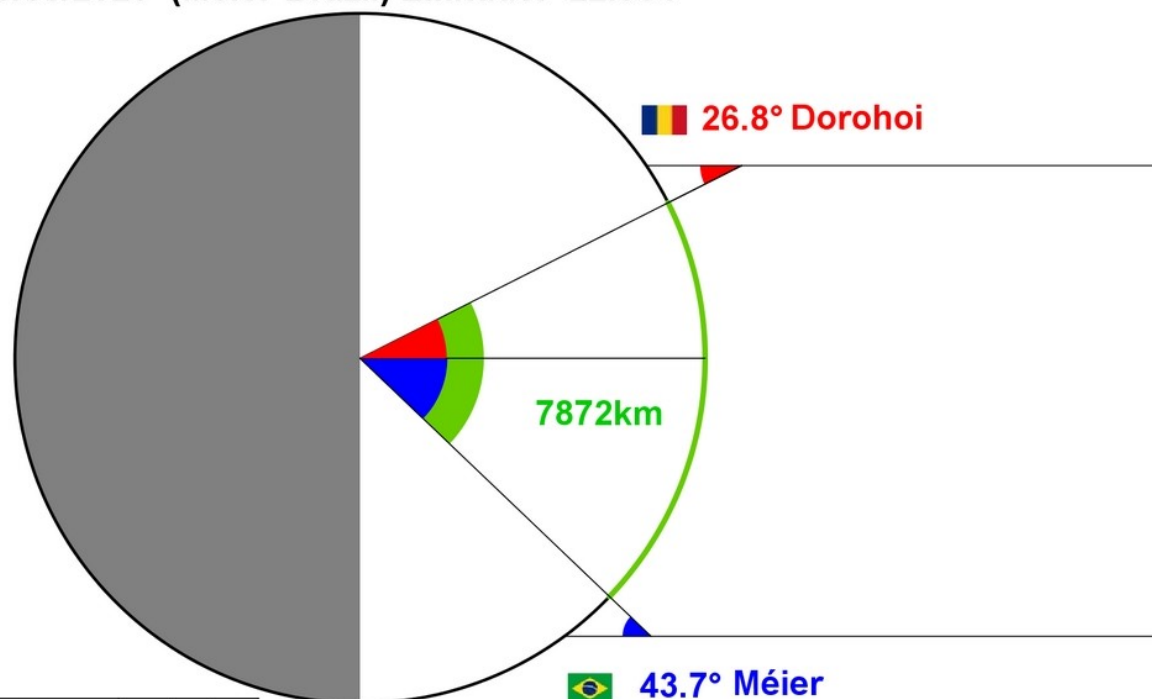


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Méier	Brazil	Escola Municipal Bento Ribeiro	-22.904	-43.280

Date	Gnomon	Shadow	Angle
01 June 2020	20.0cm	-18.0cm	-42.0°
02 June 2020	25cm	-23cm	-42.6°
03 June 2020	25.0cm	-22.0cm	-41.3°
04 June 2020	23.0cm	-21.0cm	-42.4°
05 June 2020	25.0cm	-23.0cm	-42.6°
06 June 2020	20.0cm	-18.0cm	-42.0°
08 June 2020	32.0cm	-28.0cm	-41.2°
09 June 2020	8.0cm	-6.0cm	-36.9°
11 June 2020	5.0cm	-4.0cm	-38.7°
12 June 2020	17.0cm	-15.0cm	-41.4°
13 June 2020	5.0cm	-4.0cm	-38.7°
16 June 2020	30cm	-26cm	-40.9°
17 June 2020	30.0cm	-28cm	-43.0°
18 June 2020	22.0cm	-22.0cm	-45.0°
19 June 2020	35cm	-34cm	-44.2°
20 June 2020	45cm	-43cm	-43.7°
21 June 2020	12cm	-10cm	-39.8°
22 June 2020	25cm	-23cm	-42.6°
23 June 2020	55cm	-51cm	-42.8°
24 June 2020	16cm	-14cm	-41.2°
25 June 2020	30cm	-28cm	-43°
27 June 2020	25cm	-23cm	-42.6°
29 June 2020	8cm	-6cm	-36.9°
30 June 2020	40cm	-37cm	-42.8°

20/06/2020 (Dorohoi-Romania) Latitude: 47.953°

20/06/2020 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
7872km	26.8°+43.7°

$$\text{circumference} = \frac{360^\circ \times 7872\text{km}}{26.8^\circ + 43.7^\circ} = 40197 \text{ km}$$



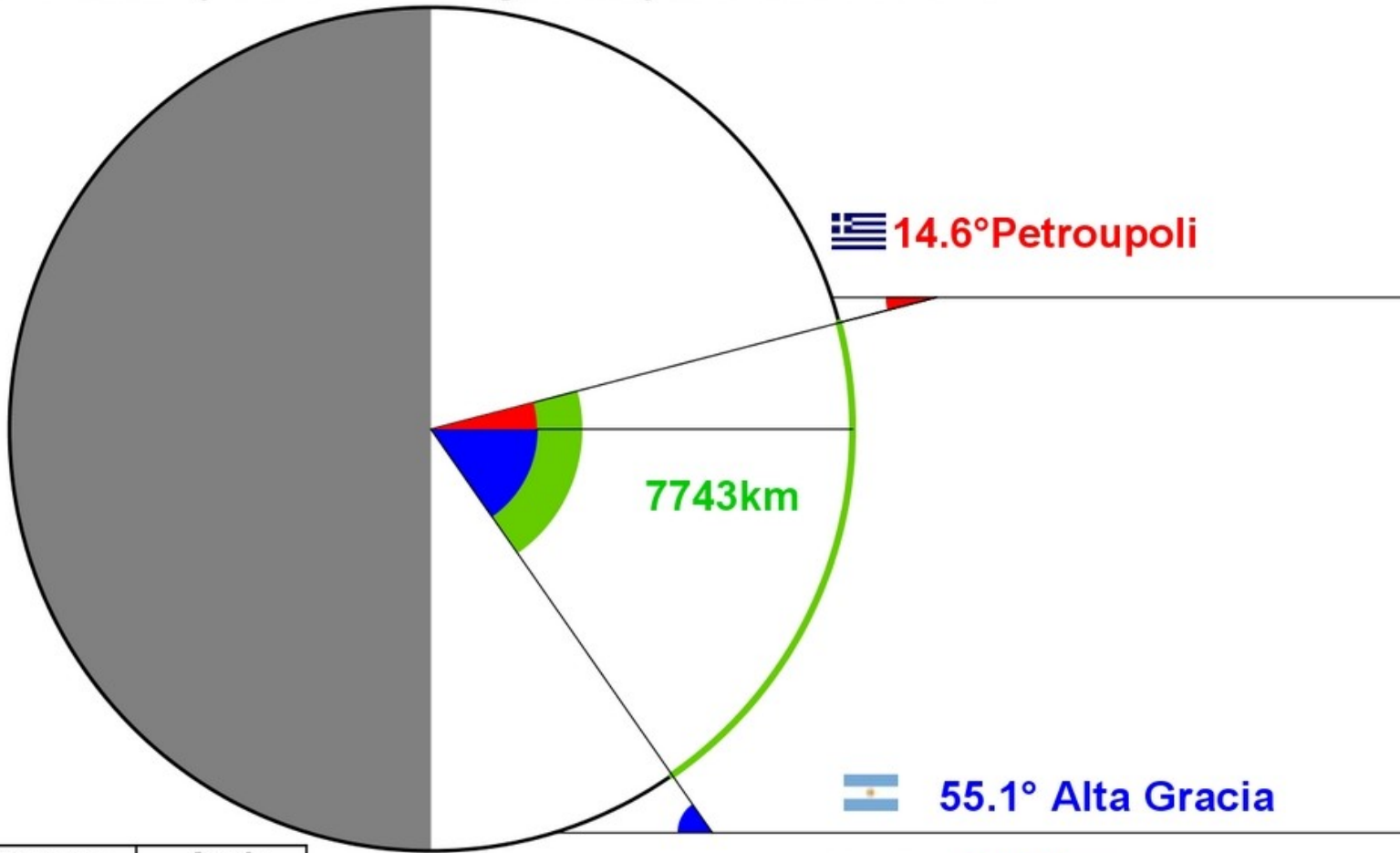
Petroupoli, Greece



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

Date	Gnomon	Shadow	Angle
04 June 2020	40.0cm	11.0cm	15.4°
14 June 2020	40.0cm	10.5cm	14.7°
17 June 2020	40.0cm	10.4cm	14.6°
21 June 2020	40cm	10.4cm	14.6°

21/06/2020 (Petroupoli-Greece) Latitude: 38.036°
21/06/2020 (Alta Gracia-Argentina) Latitude: -31.659°



Distance	Angle
circumference	360°
7743km	14.6°+55.1°

circumference = $\frac{360^\circ \times 7743\text{km}}{14.6^\circ + 55.1^\circ} = 39993 \text{ km}$



Piranguinho, Brazil

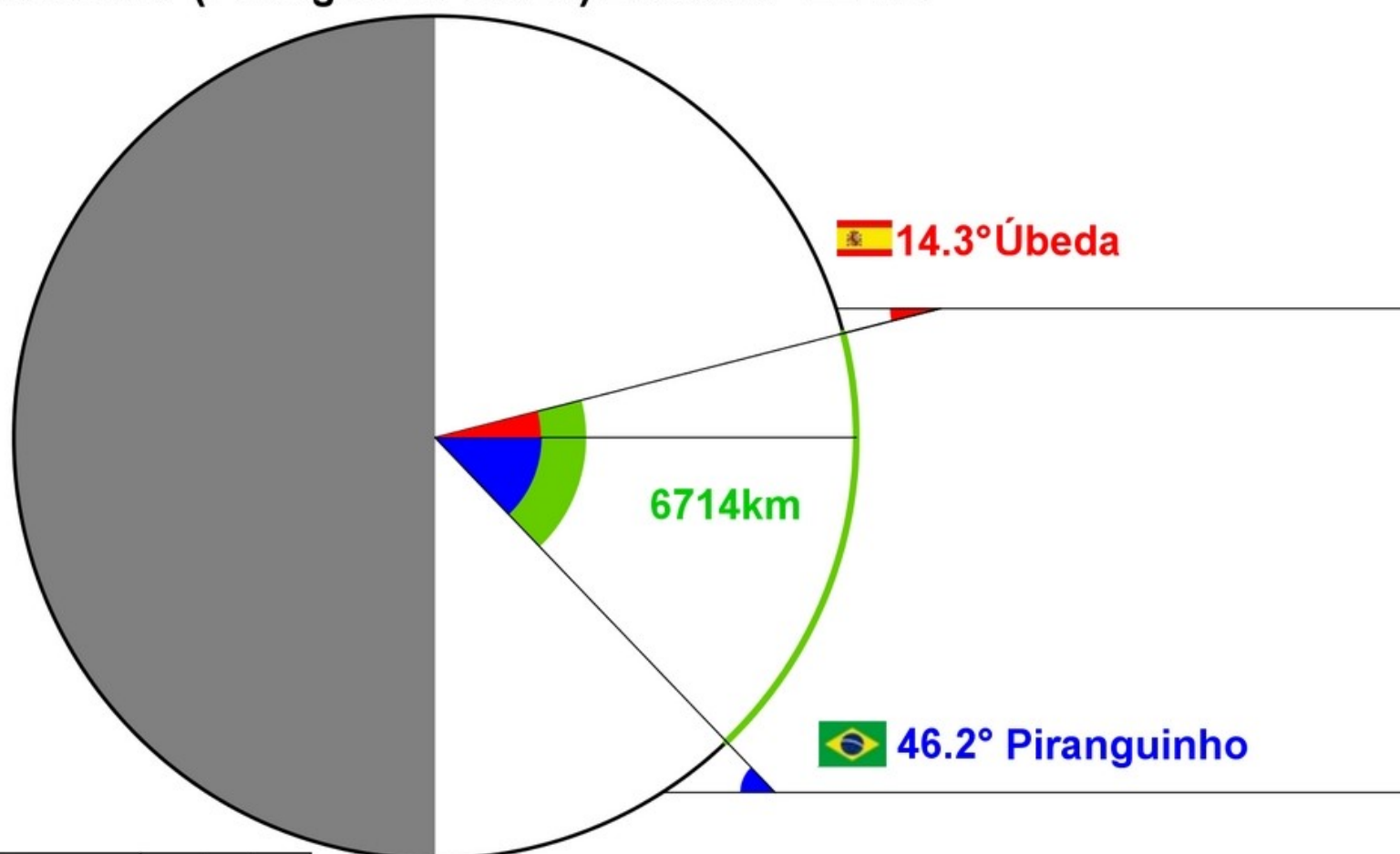


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Piranguinho	Brazil	Universidade Federal de Itajubá	-22.411	-45.535

Date	Gnomon	Shadow	Angle
02 June 2020	70cm	-69.7cm	-44.9°
20 June 2020	70cm	-73cm	-46.2°
24 June 2020	70cm	-72.5cm	-46°

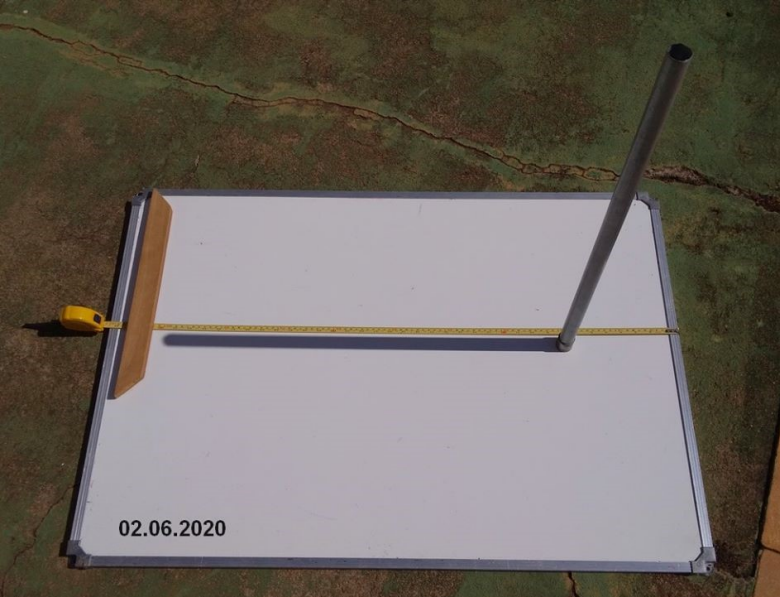
20/06/2020 (Úbeda-Spain) Latitude: 38.017°

20/06/2020 (Piranguinho-Brazil) Latitude: -22.411°



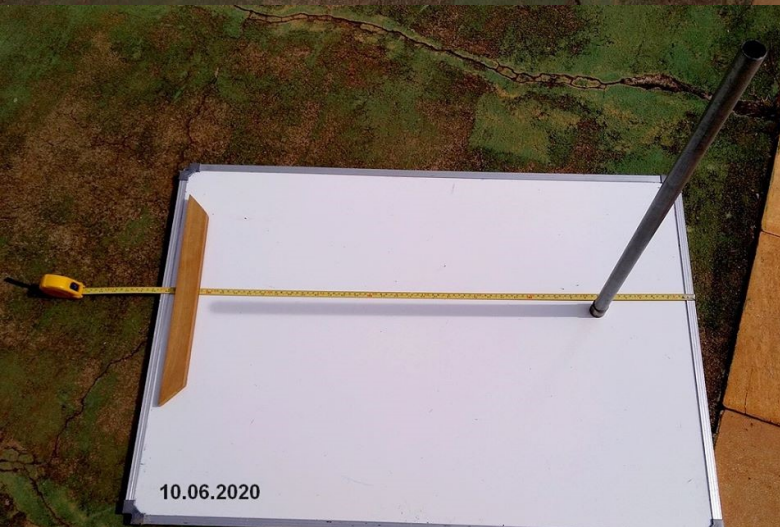
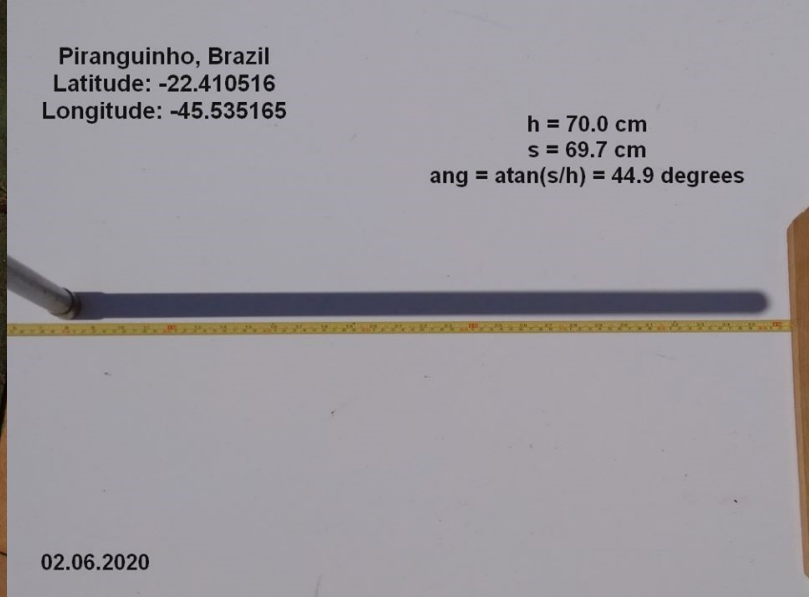
Distance	Angle
circumference	360°
6714km	14.3° + 46.2°

$$\text{circumference} = \frac{360^\circ \times 6714\text{km}}{14.3^\circ + 46.2^\circ} = 39951 \text{ km}$$



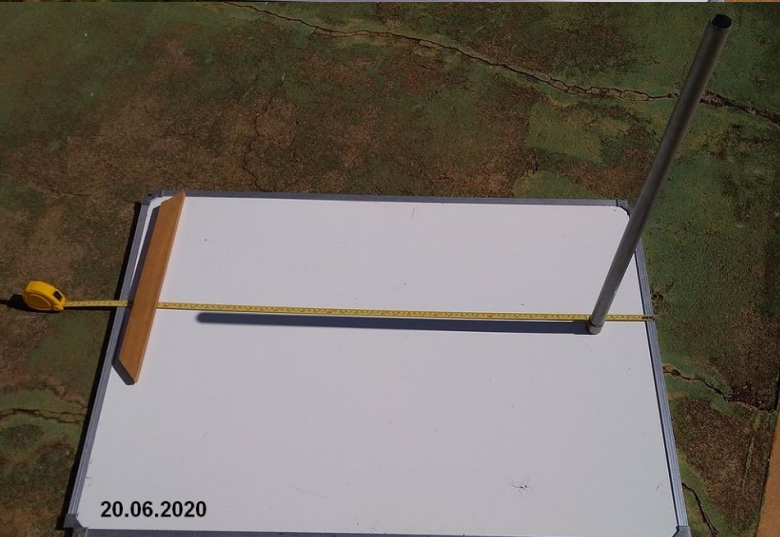
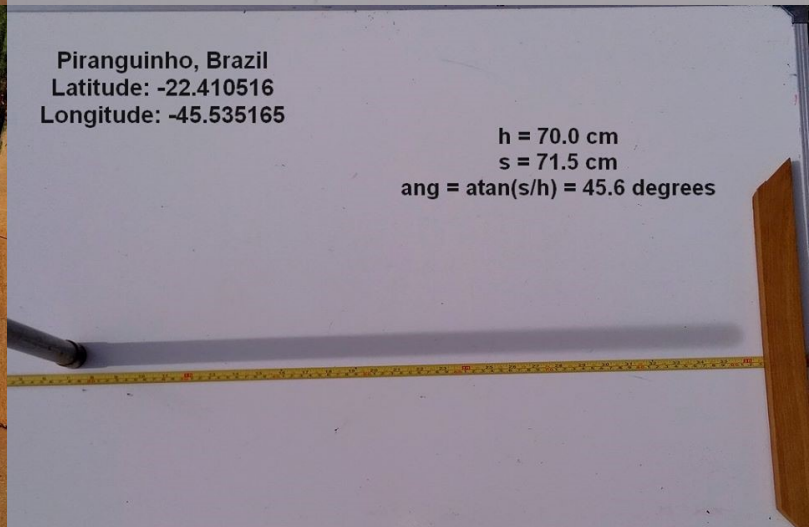
Piranguinho, Brazil
Latitude: -22.410516
Longitude: -45.535165

$h = 70.0 \text{ cm}$
 $s = 69.7 \text{ cm}$
 $\text{ang} = \text{atan}(s/h) = 44.9 \text{ degrees}$



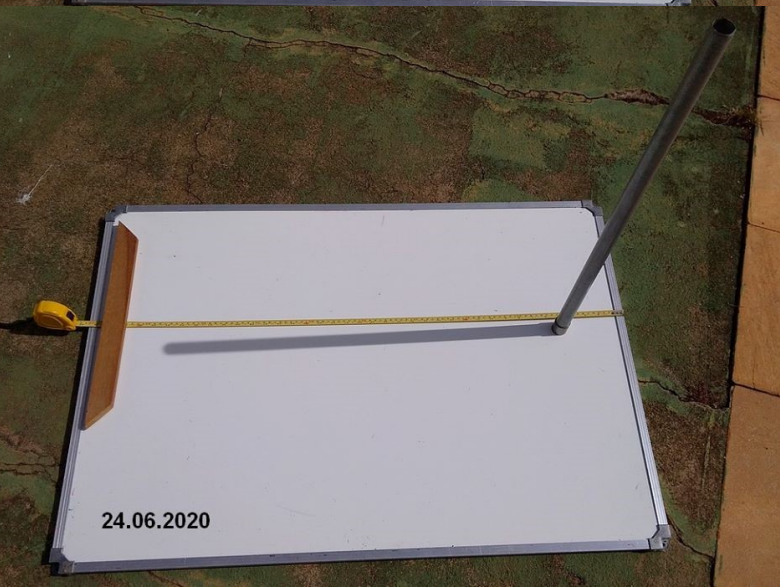
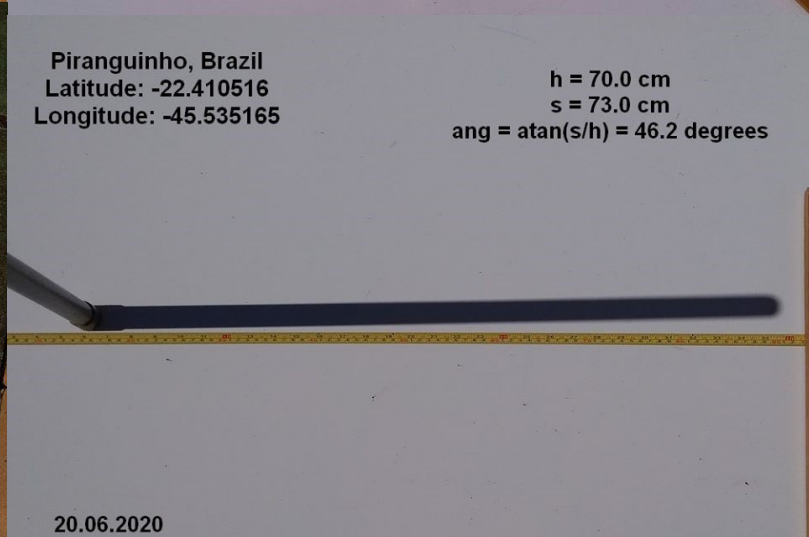
Piranguinho, Brazil
Latitude: -22.410516
Longitude: -45.535165

$h = 70.0 \text{ cm}$
 $s = 71.5 \text{ cm}$
 $\text{ang} = \text{atan}(s/h) = 45.6 \text{ degrees}$



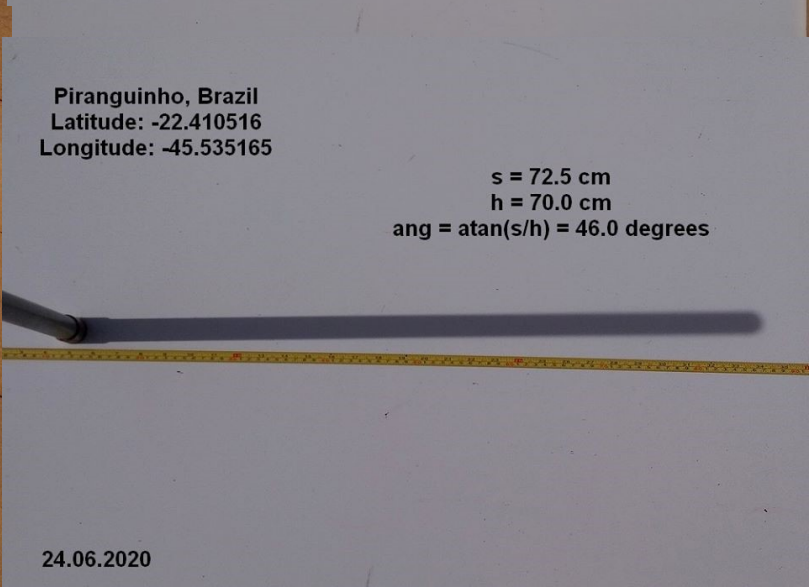
Piranguinho, Brazil
Latitude: -22.410516
Longitude: -45.535165

$h = 70.0 \text{ cm}$
 $s = 73.0 \text{ cm}$
 $\text{ang} = \text{atan}(s/h) = 46.2 \text{ degrees}$



Piranguinho, Brazil
Latitude: -22.410516
Longitude: -45.535165

$s = 72.5 \text{ cm}$
 $h = 70.0 \text{ cm}$
 $\text{ang} = \text{atan}(s/h) = 46.0 \text{ degrees}$



Rio de Janeiro CENOM, Brazil

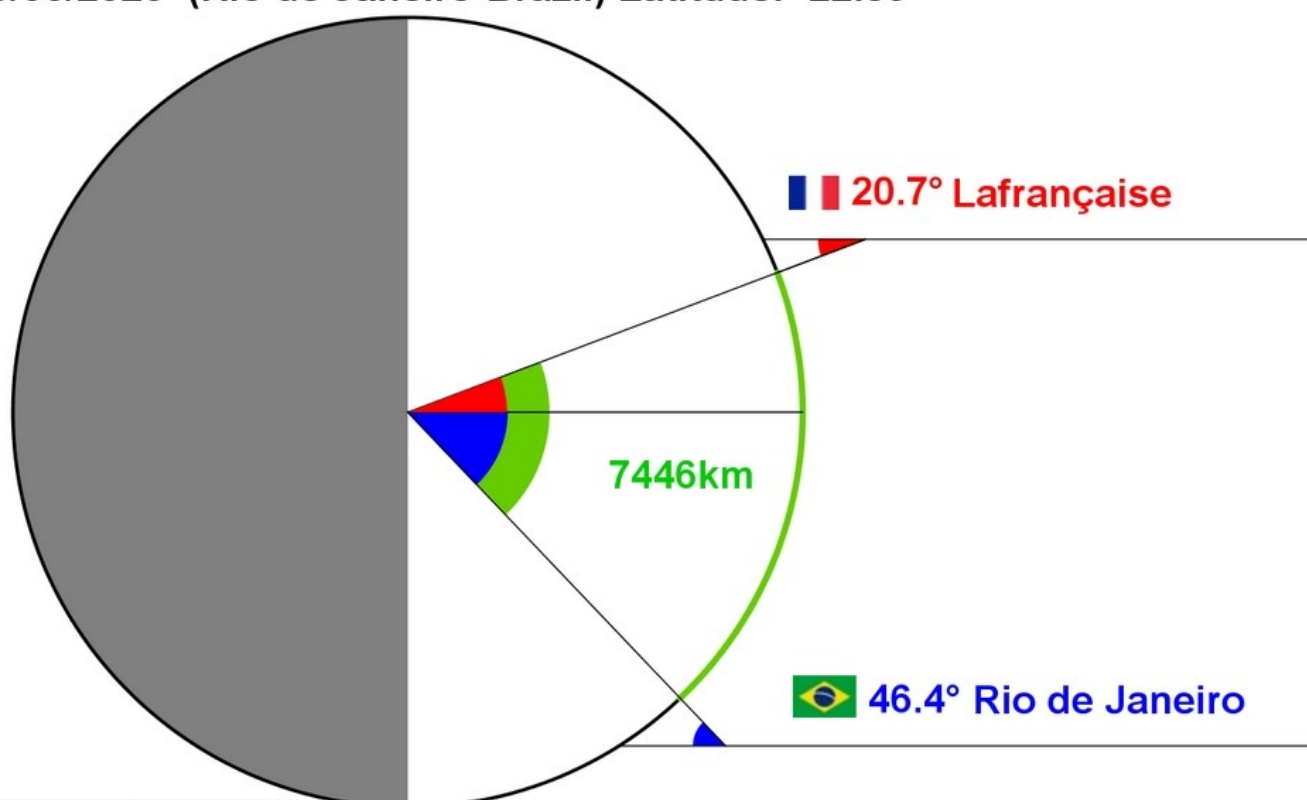


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317

Date	Gnomon	Shadow	Angle
01 June 2020	20.0cm	-19.0cm	-43.5°
02 June 2020	20cm	-20cm	-45°
04 June 2020	20.0cm	-21.0cm	-46.4°
05 June 2020	20.0cm	-21.0cm	-46.4°
06 June 2020	20.0cm	-21.0cm	-46.4°
09 June 2020	20.0cm	-21.0cm	-46.4°
11 June 2020	20.0cm	-21.0cm	-46.4°
12 June 2020	20.0cm	-21.0cm	-46.4°
13 June 2020	20.0cm	-21.0cm	-46.4°
16 June 2020	20cm	-21cm	-46.4°
18 June 2020	20.0cm	-21.0cm	-46.4°
19 June 2020	20cm	-21cm	-46.4°
20 June 2020	20cm	-21cm	-46.4°
21 June 2020	20.0cm	-21.5cm	-47.1°
22 June 2020	20cm	-22cm	-47.7°
23 June 2020	20cm	-20cm	-45°
24 June 2020	20cm	-21cm	-46.4°
25 June 2020	20cm	-21cm	-46.4°
27 June 2020	20cm	-21cm	-46.4°
28 June 2020	20cm	-21cm	-46.4°
29 June 2020	20cm	-20cm	-45°
30 June 2020	20cm	-21cm	-46.4°

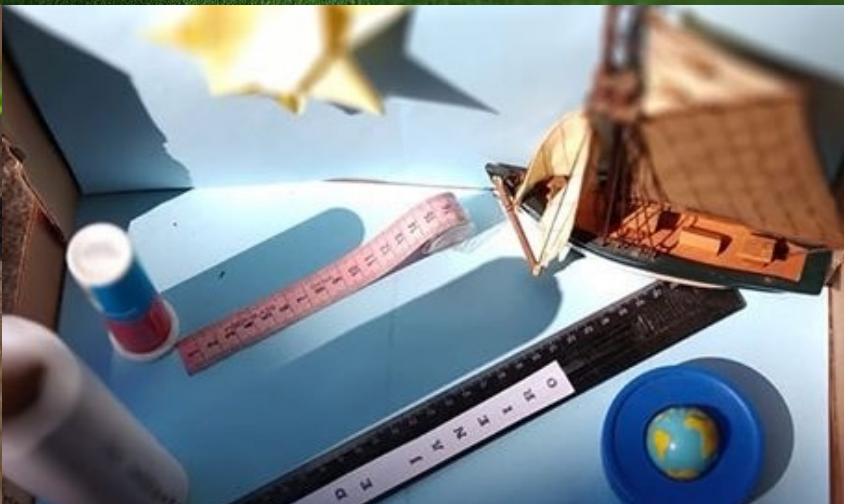
20/06/2020 (Lafrançaie-France) Latitude: 44.127°

20/06/2020 (Rio de Janeiro-Brazil) Latitude: -22.89°



Distance	Angle
circumference	360°
7446km	20.7°+46.4°

$$\text{circumference} = \frac{360^\circ \times 7446\text{km}}{20.7^\circ + 46.4^\circ} = 39949 \text{ km}$$



São João de Meriti, Brazil

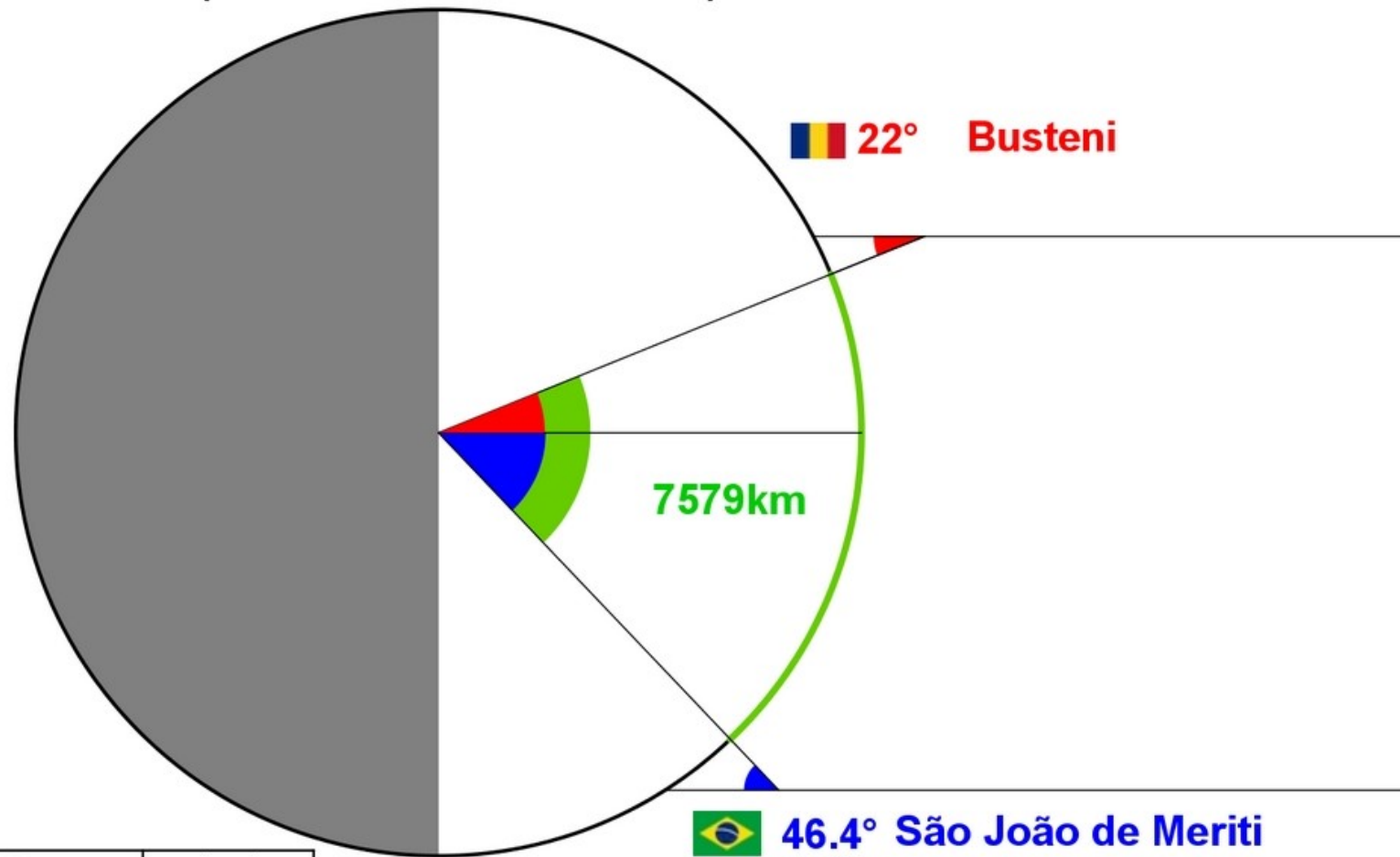


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	São João de Meriti	Brazil	31 Marechal Rondon	-22.800	-43.367

Date	Gnomon	Shadow	Angle
18 June 2020	20.0cm	-21.0cm	-46.4°

18/06/2020 (Busteni-Romania) Latitude: 45.416°

18/06/2020 (São João de Meriti-Brazil) Latitude: -22.8°



Distance	Angle
circumference	360°
7579km	22° + 46.4°

circumference = $\frac{360^\circ \times 7579\text{km}}{22^\circ + 46.4^\circ} = 39889 \text{ km}$



São Mateus, Brazil

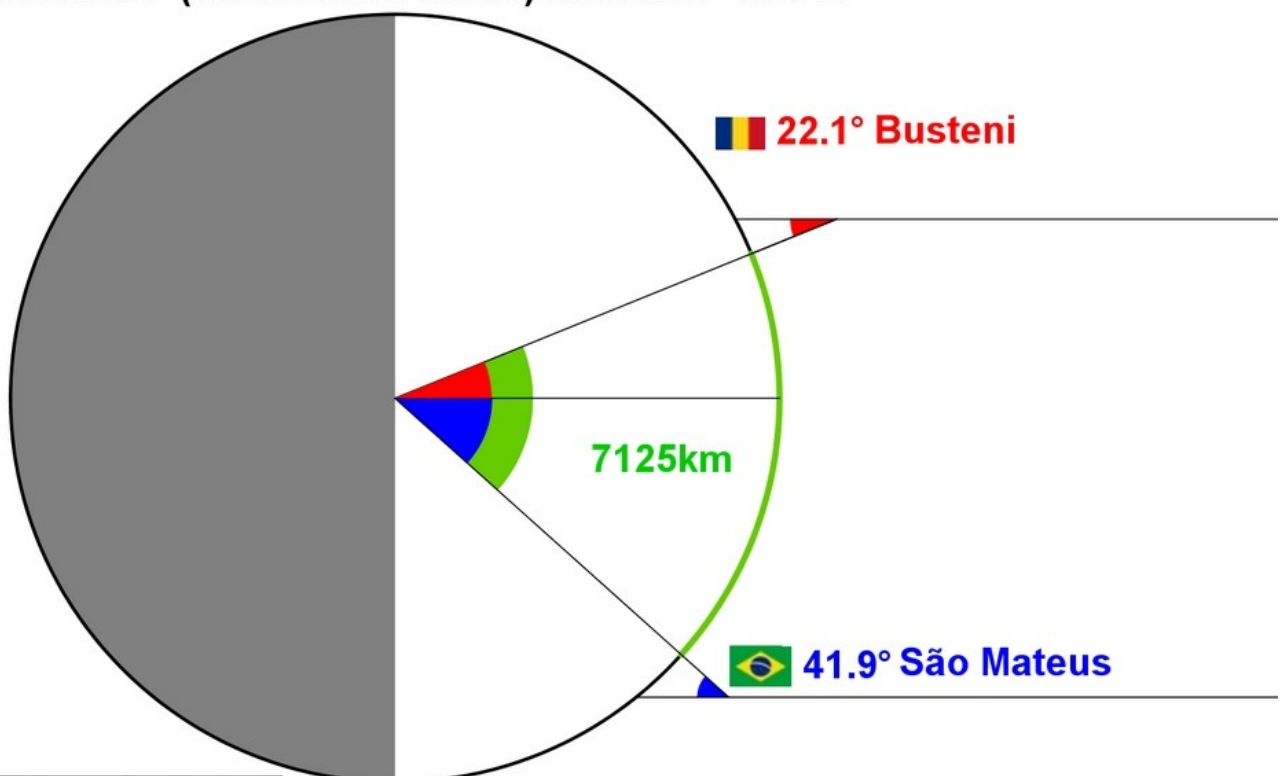


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	São Mateus	Brazil	Escola Estadual de Ensino Médio Nestor Gomes	-18.716	-39.856

Date	Gnomon	Shadow	Angle
01 June 2020	19.5cm	-16.5cm	-40.2°
02 June 2020	19.5cm	-16.8cm	-40.7°
04 June 2020	19.5cm	-17.0cm	-41.1°
05 June 2020	19.5cm	-17.1cm	-41.2°
07 June 2020	19.5cm	-17.2cm	-41.4°
08 June 2020	19.5cm	-17.0cm	-41.1°
09 June 2020	19.5cm	-16.9cm	-40.9°
11 June 2020	19.5cm	-17.2cm	-41.4°
13 June 2020	19.5cm	-17.2cm	-41.4°
14 June 2020	19.5cm	-17.5cm	-41.9°
15 June 2020	19.5cm	-17.4cm	-41.7°
17 June 2020	19.5cm	-17.5cm	-41.9°
20 June 2020	19.5cm	-17.5cm	-41.9°
21 June 2020	19.5cm	-17.4cm	-41.7°
22 June 2020	19.50cm	-17.5cm	-41.9°
23 June 2020	19.5cm	-17.5cm	-41.9°
26 June 2020	19.5cm	-17.2cm	-41.4°
28 June 2020	19.5cm	-17.3cm	-41.6°

14/06/2020 (Busteni-Romania) Latitude: 45.416°

14/06/2020 (São Mateus-Brazil) Latitude: -18.716°



Distance	Angle
circumference	360°
7125km	22.1° + 41.9°

$$\text{circumference} = \frac{360^\circ \times 7125\text{km}}{22.1^\circ + 41.9^\circ} = 40078 \text{ km}$$



Úbeda, Spain

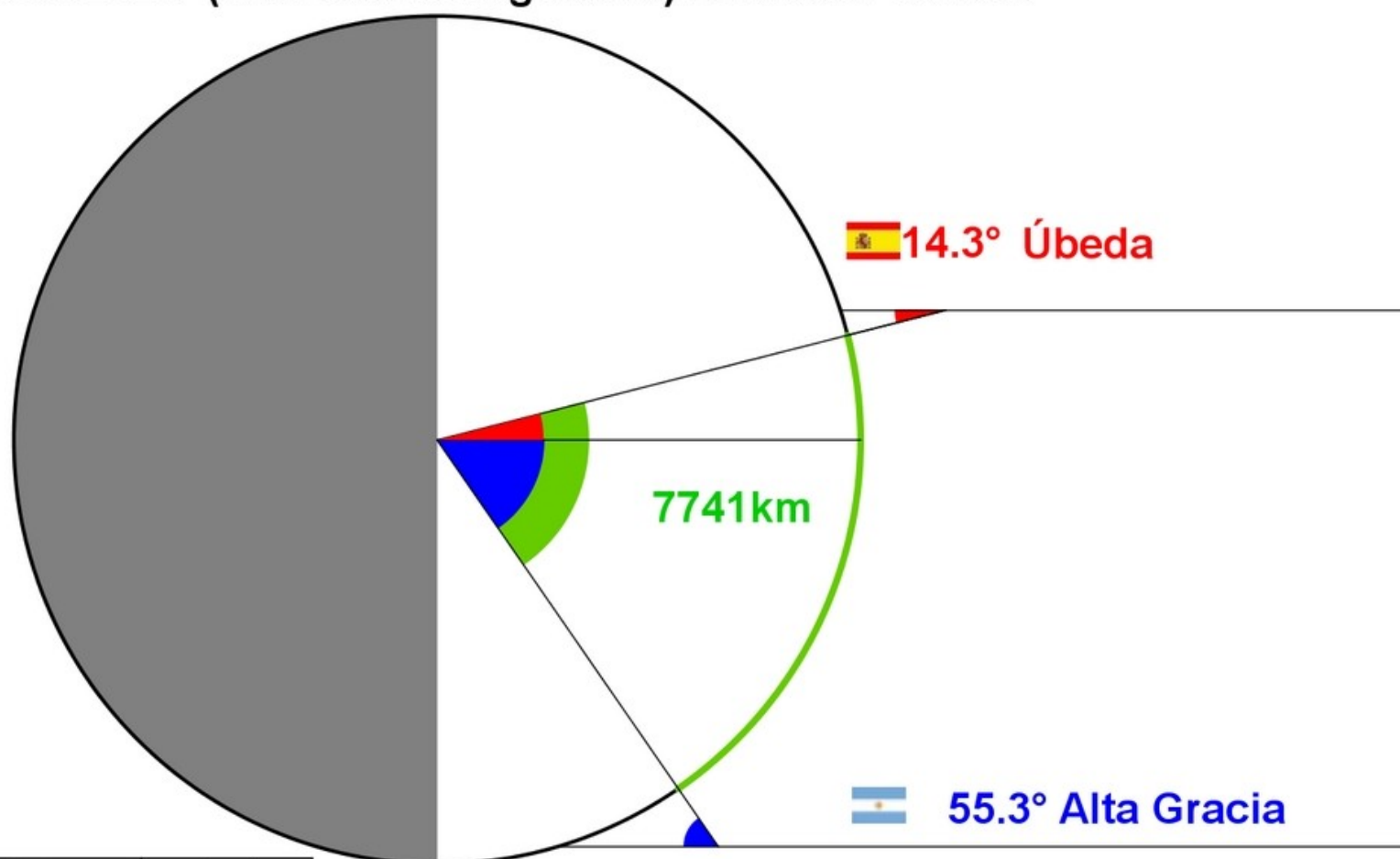


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Úbeda	Spain	Colegio Salesiano Santo Domingo Savio	38.017	-3.367

Date	Gnomon	Shadow	Angle
03 June 2020	80.6cm	22.9cm	15.9°
09 June 2020	80.5cm	21.2cm	14.8°
15 June 2020	73.5cm	18.8cm	14.3°
20 June 2020	73.5cm	18.7cm	14.3°
21 June 2020	73.4cm	18.8cm	14.4°
29 June 2020	73.4cm	19.1cm	14.6°

20/06/2020 (Úbeda-Spain) Latitude: 38.017°

20/06/2020 (Alta Gracia-Argentina) Latitude: -31.659°



$$\text{circumference} = \frac{360^\circ \times 7741\text{km}}{14.3^\circ + 55.3^\circ} = 40040 \text{ km}$$

Distance	Angle
circumference	360°
7741km	14.3° + 55.3°



Yamunanagar, India

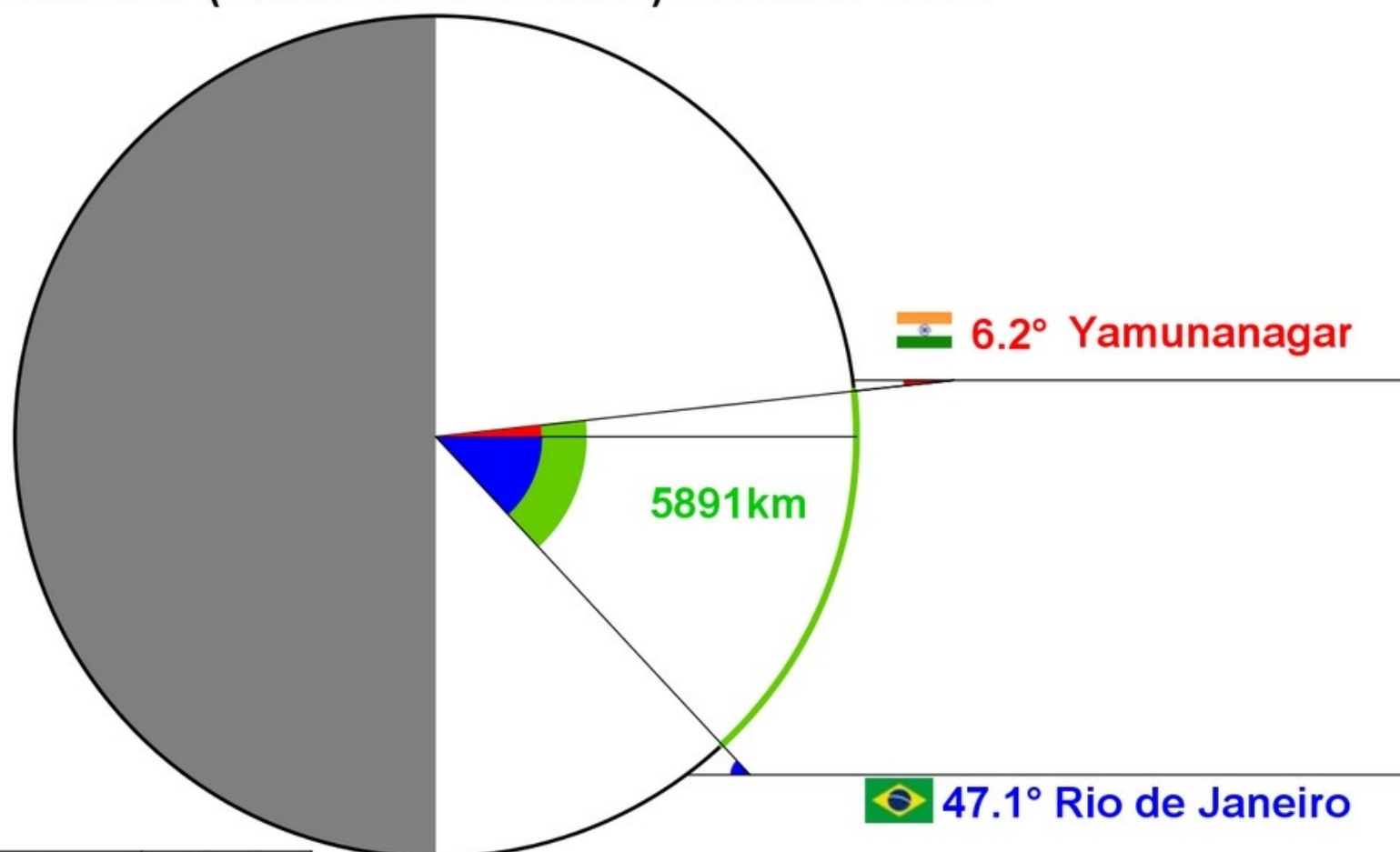


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Yamunanagar	India	C V Raman Science Club	30.133	77.283

Date	Gnomon	Shadow	Angle
21 June 2020	30.4cm	3.3cm	6.2°

21/06/2020 (Yamunanagar-India) Latitude: 30.133°

21/06/2020 (Rio de Janeiro-Brazil) Latitude: -22.89°



Distance	Angle
circumference	360°
5891km	6.2° + 47.1°

$$\text{circumference} = \frac{360^\circ \times 5891\text{km}}{6.2^\circ + 47.1^\circ} = 39789 \text{ km}$$



