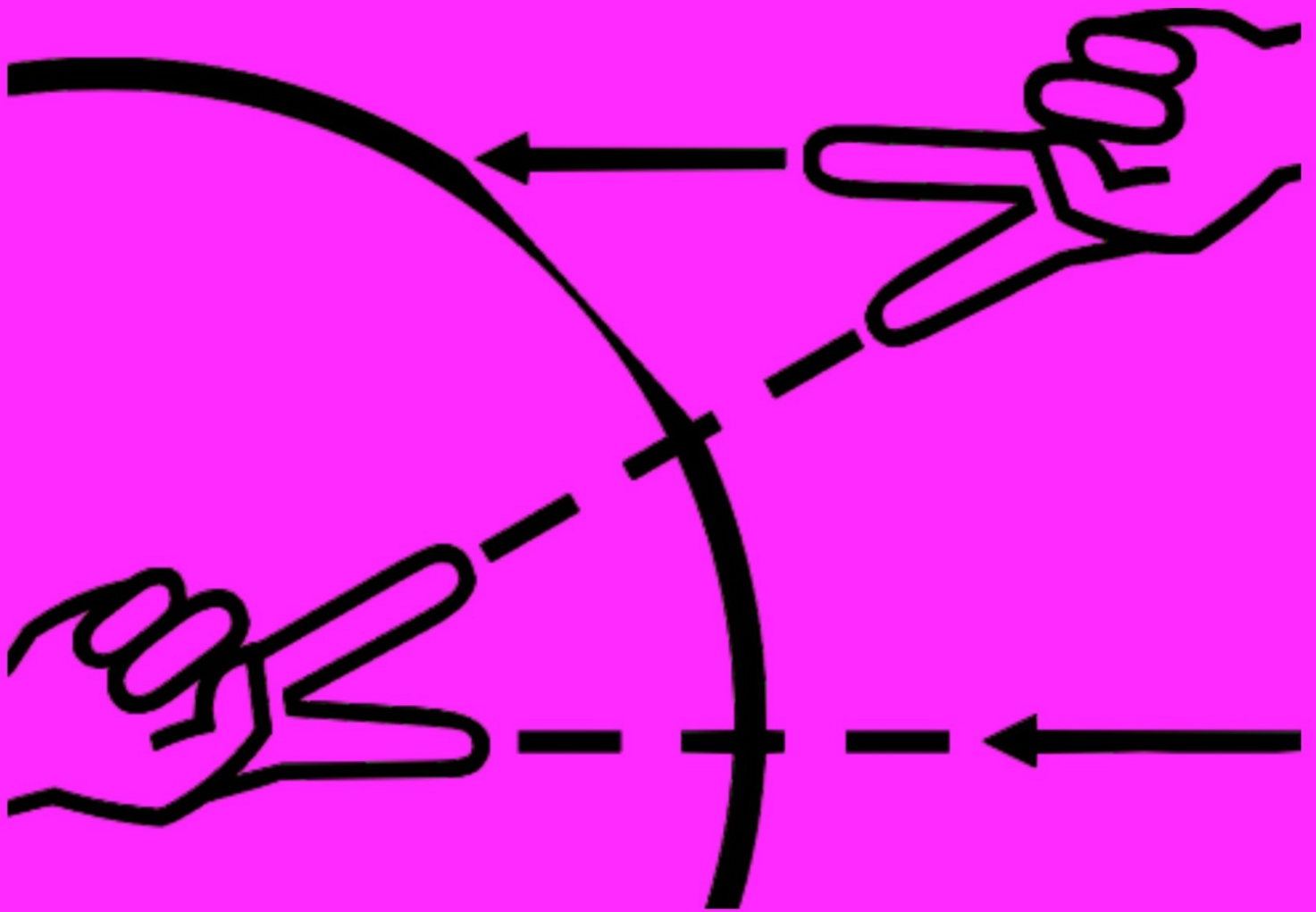


Eratosthenes



2 Continents

9 Countries

11 Schools

70 Measures

2 Continents

9 Countries

11 Schools

70 Measures

Europe (5)

Greece

Aigio – Ilion

France

Montcuq

Romania

Busteni

Italy

Merlara

America (5)

Brazil

Rio de Janeiro - Méier

Argentina

Chivilcoy

Colombia

Guarne











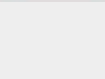
USA

Sault Sainte Marie

Africa (1)


Tunisia

Bizerte

Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535
	Chivilcoy	Argentina	Parque Cielos del Sur	-34.911	-60.014
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-76.522
	Ilion	Greece	11th Junior High School of Ilion	38.033	23.697
	Méier	Brazil	Escola Municipal Bento Ribeiro	-22.904	-43.280
	Merlara	Italy	Lower Secondary School "Dante Alighieri"	45.166	11.445
	Montcuq	France	Fondation La main à la pâte	44.340	1.210
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317
	Sault Sainte Marie	MI USA	AECM Carribean University	46.480	-84.350

Aigio, Greece

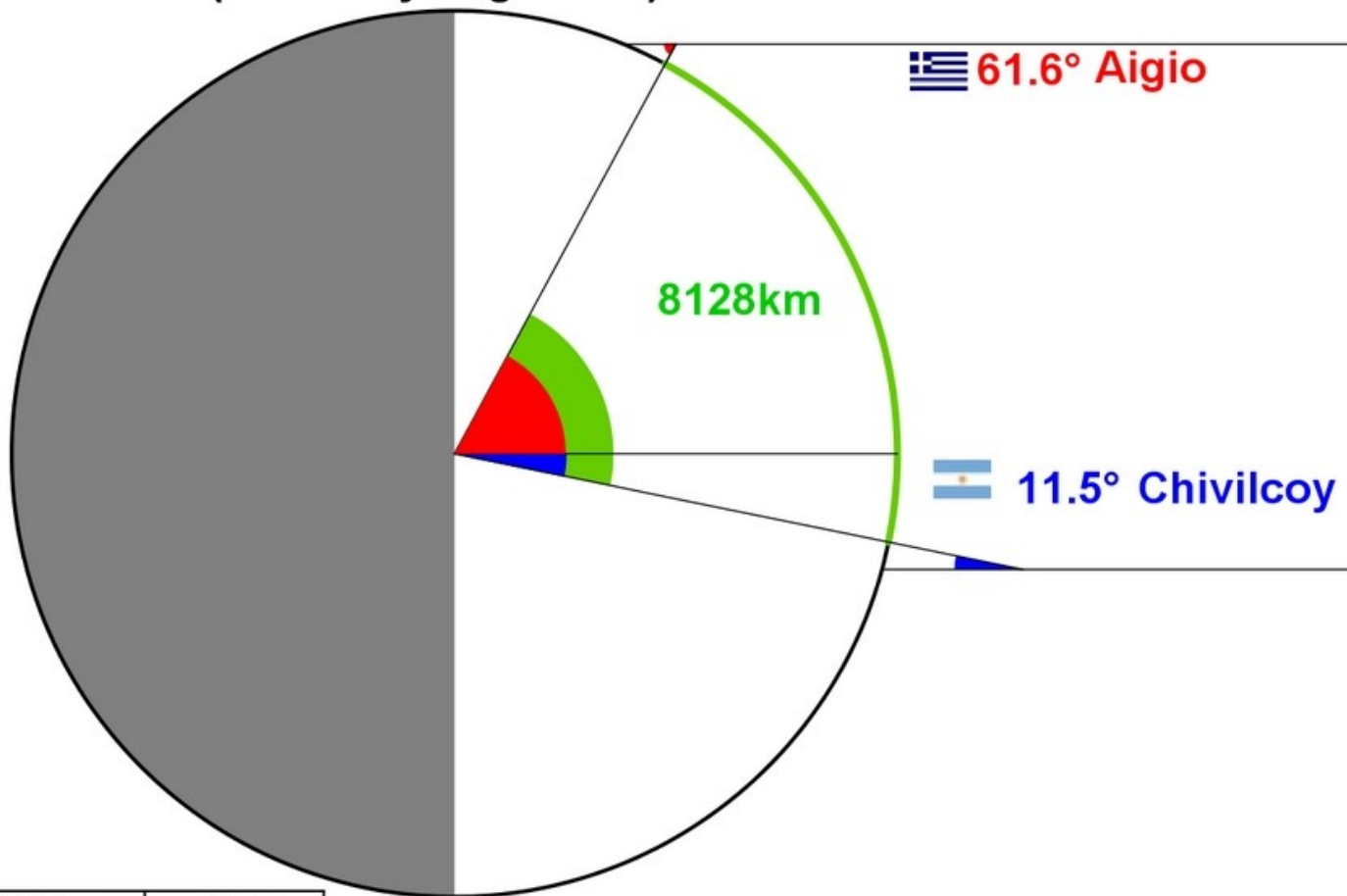


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079

Date	Gnomon	Shadow	Angle
14 December 2021	30.0cm	54.5cm	61.2°
20 December 2021	30.0cm	55.5cm	61.6°
21 December 2021	30.0cm	55.5cm	61.6°

21/12/2021 (Aigio-Greece) Latitude: 38.252°

21/12/2021 (Chivilcoy-Argentina) Latitude: -34.911°




Distance	Angle
circumference	360°
8128km	61.6° + 11.5°

$$\text{circumference} = \frac{360^\circ \times 8128\text{km}}{61.6^\circ + 11.5^\circ} = 40028 \text{ km}$$



Bizerte, Tunisia



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

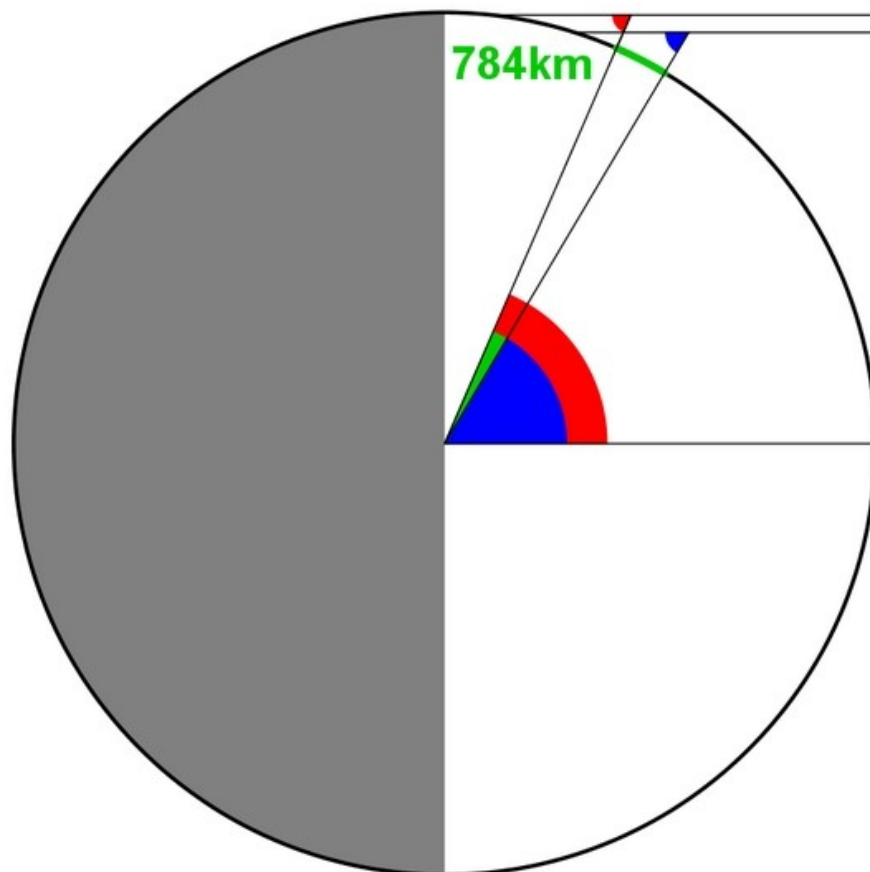
Date	Gnomon	Shadow	Angle
02 December 2021	22.0cm	38.5cm	60.3°
03 December 2021	22.0cm	37.0cm	59.3°
09 December 2021	49.0cm	90.0cm	61.4°
14 December 2021	22.0cm	39.5cm	60.9°

03/12/2021 (Montcuq-France) Latitude: 44.34°

03/12/2021 (Bizerte-Tunisia) Latitude: 37.284°

 66.5° Montcuq

 59.3° Bizerte



$$\text{circumference} = \frac{360^\circ \times 784\text{km}}{66.5^\circ - 59.3^\circ} = 39200 \text{ km}$$

Distance	Angle
circumference	360°
784km	66.5° - 59.3°



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TE 8
CAMERA



Busteni, Romania

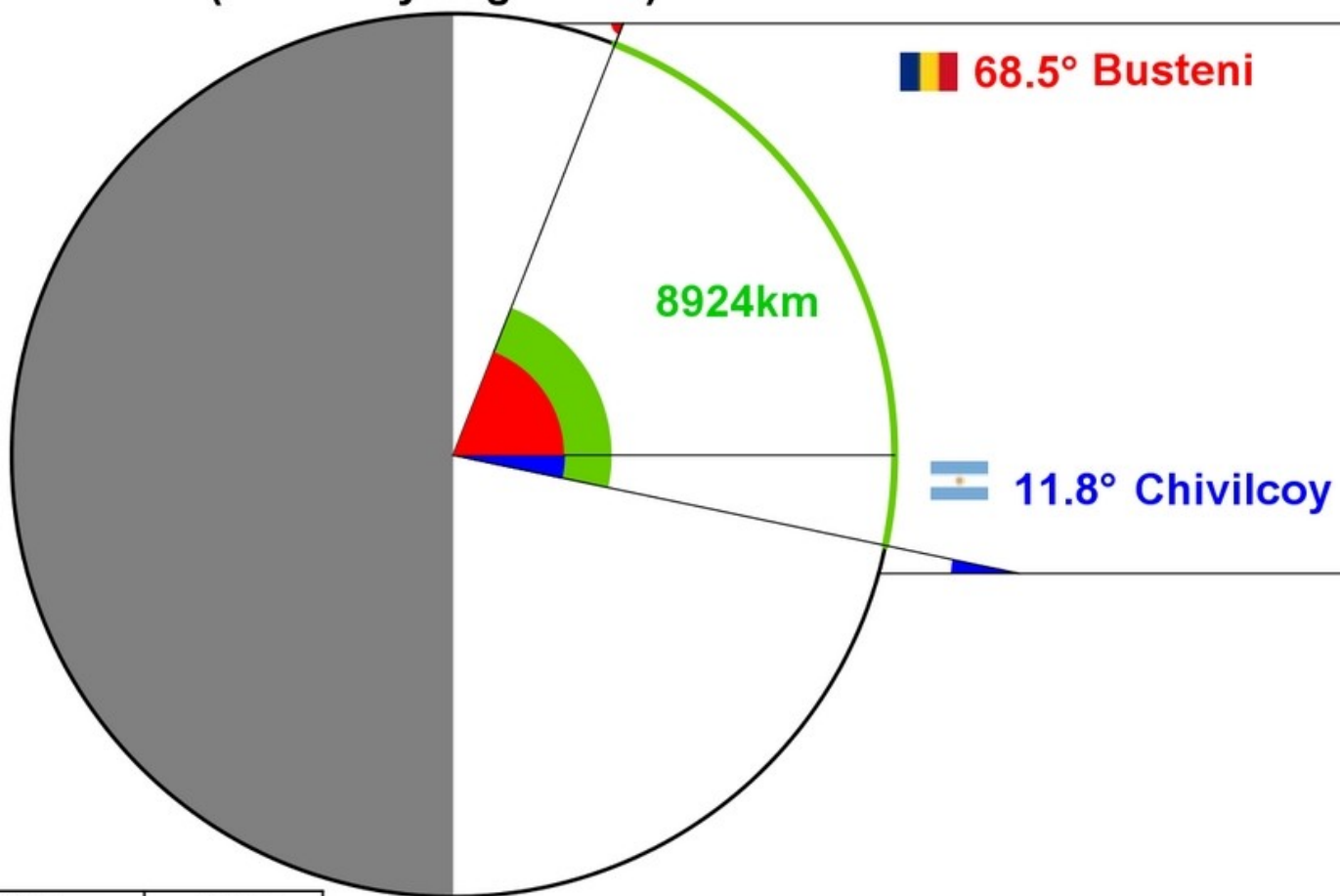


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535

Date	Gnomon	Shadow	Angle
13 December 2021	50.0cm	127.1cm	68.5°
16 December 2021	50cm	128.2cm	68.7°
20 December 2021	20cm	51.6cm	68.8°
21 December 2021	23.2cm	60.0cm	68.9°

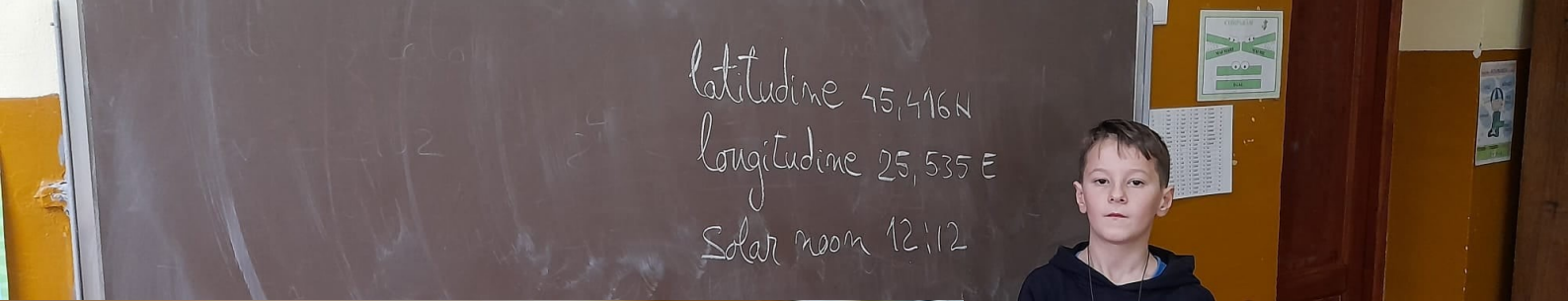
13/12/2021 (Busteni-Romania) Latitude: 45.416°

13/12/2021 (Chivilcoy-Argentina) Latitude: -34.911°




Distance	Angle
circumference	360°
8924km	68.5° + 11.8°

$$\text{circumference} = \frac{360^\circ \times 8924\text{km}}{68.5^\circ + 11.8^\circ} = 40008 \text{ km}$$



Chivilcoy, Argentina

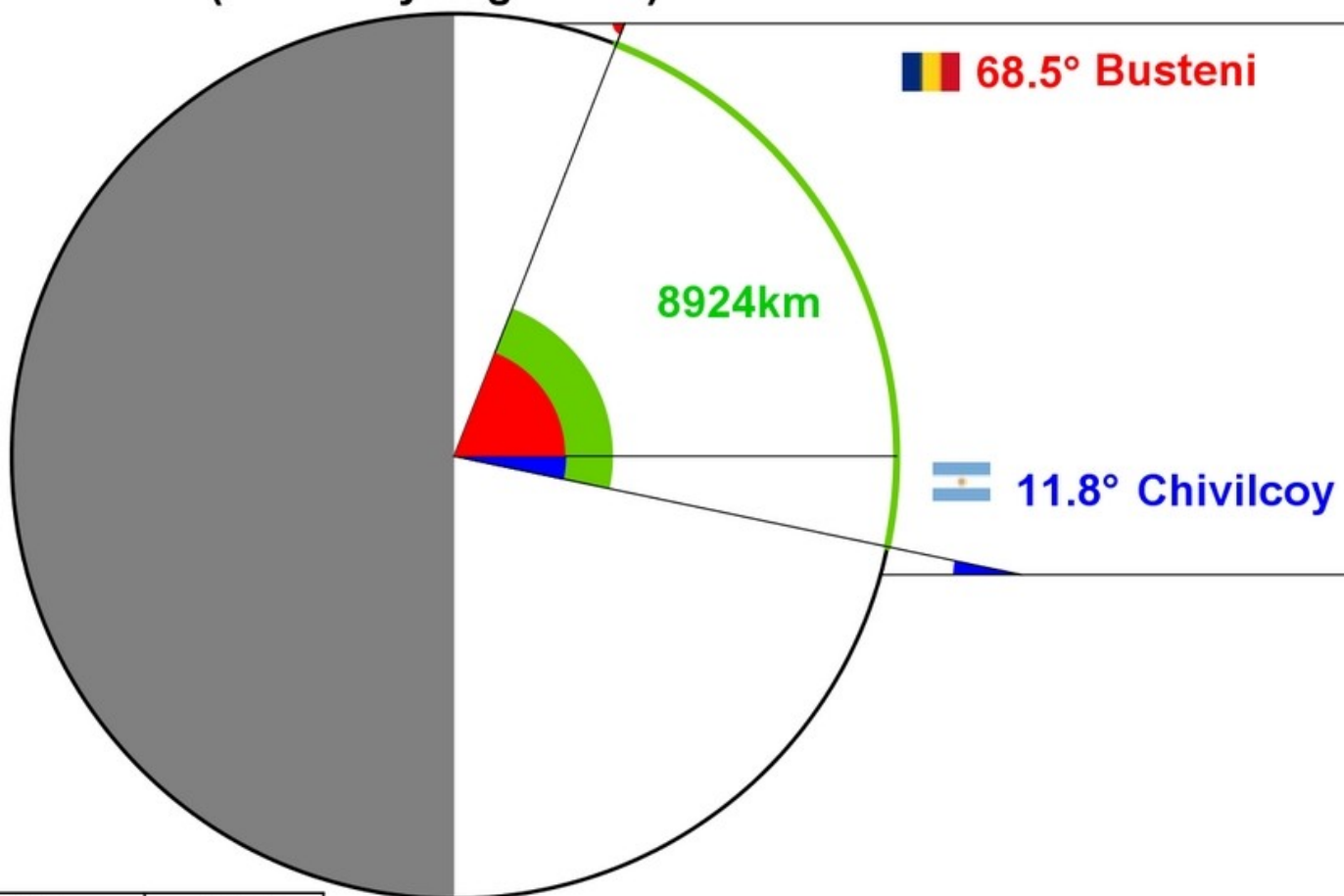


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Chivilcoy	Argentina	Parque Cielos del Sur	-34.911	-60.014

Date	Gnomon	Shadow	Angle
13 December 2021	12.0cm	-2.5cm	-11.8°
17 December 2021	12.2cm	-2.5cm	-11.6°
19 December 2021	11.8cm	-2.4cm	-11.5°
21 December 2021	11.8cm	-2.4cm	-11.5°

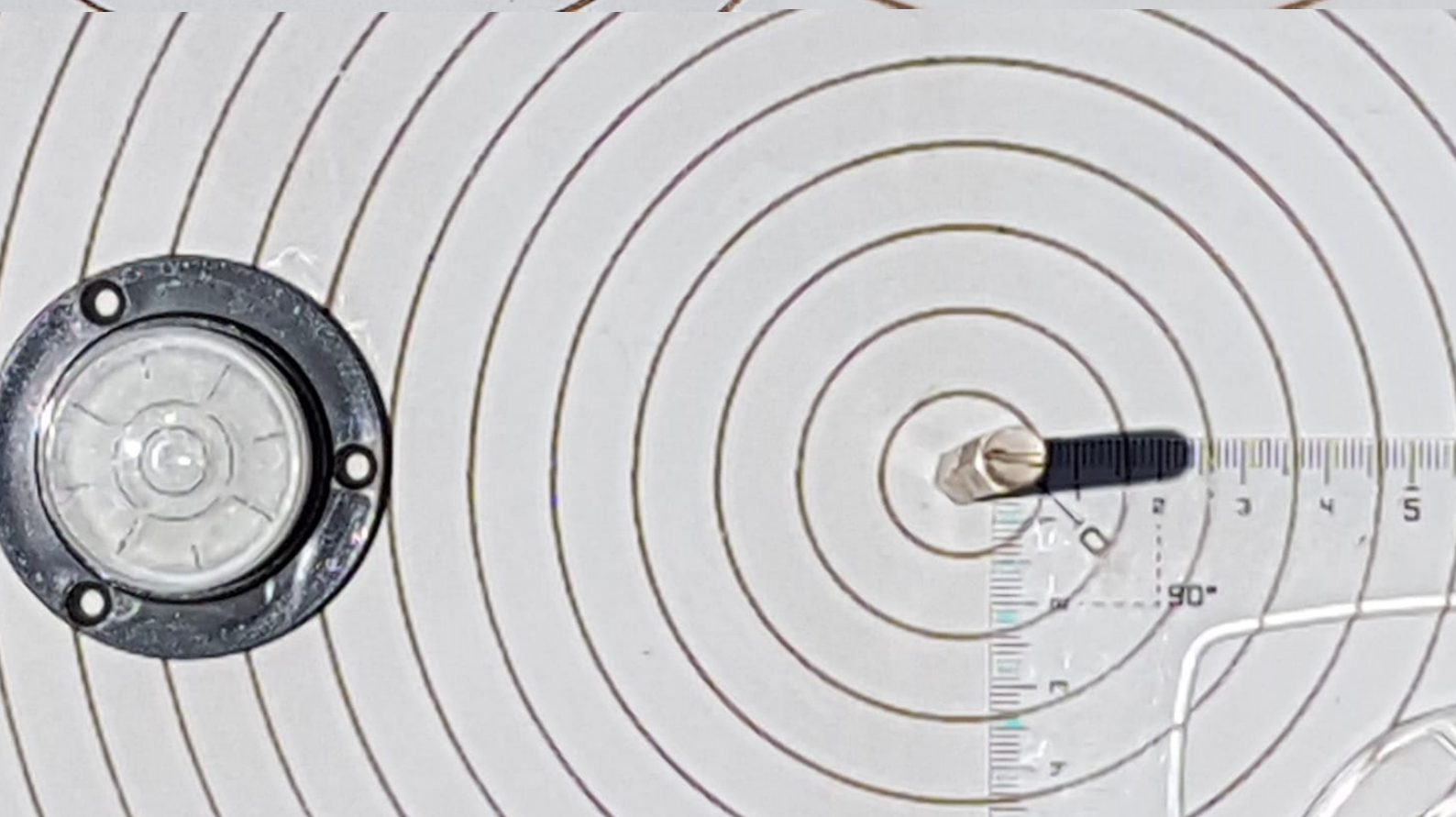
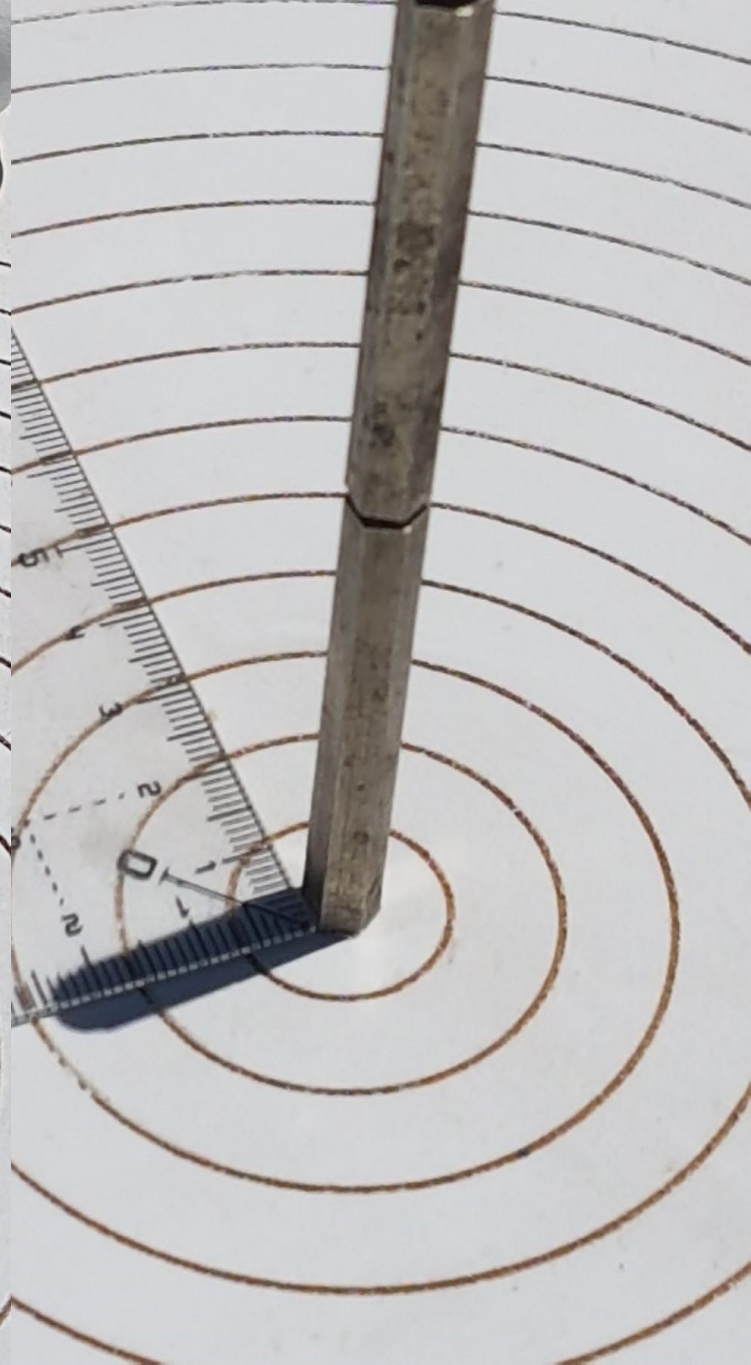
13/12/2021 (Busteni-Romania) Latitude: 45.416°

13/12/2021 (Chivilcoy-Argentina) Latitude: -34.911°




Distance	Angle
circumference	360°
8924km	68.5° + 11.8°

$$\text{circumference} = \frac{360^\circ \times 8924\text{km}}{68.5^\circ + 11.8^\circ} = 40008 \text{ km}$$



Guarne, Colombia

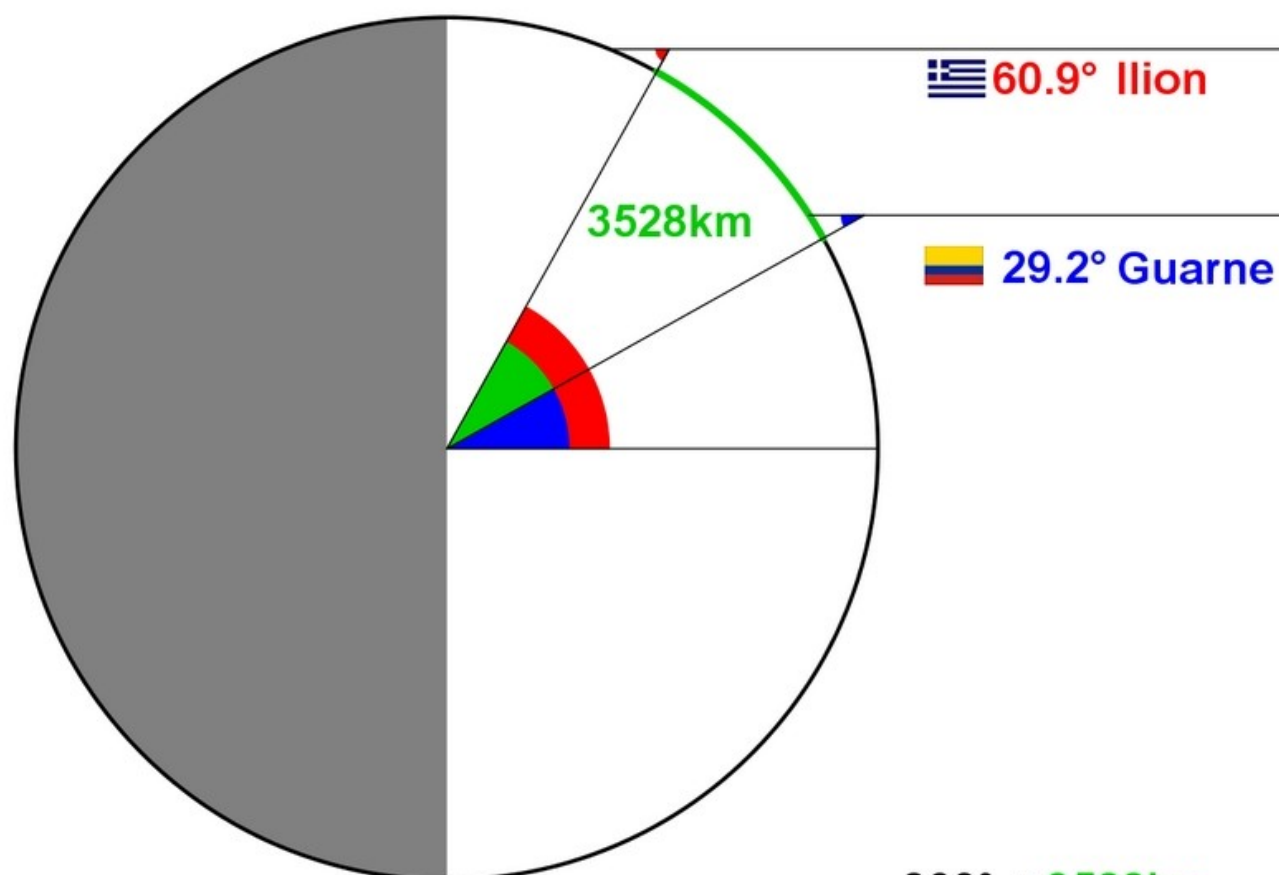


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-76.522

Date	Gnomon	Shadow	Angle
07 December 2021	7.4cm	4.1cm	29.0°
09 December 2021	15.2cm	8.5cm	29.2°

09/12/2021 (Ilion-Greece) Latitude: 38.033°

09/12/2021 (Guarne-Colombia) Latitude: 6.274°



Distance	Angle
circumference	360°
3528km	60.9° - 29.2°

$$\text{circumference} = \frac{360^\circ \times 3528\text{km}}{60.9^\circ - 29.2^\circ} = 40066 \text{ km}$$


ASTRO
FANATICOS

ASTRONOMIA DIDACTICA

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Ilion, Greece

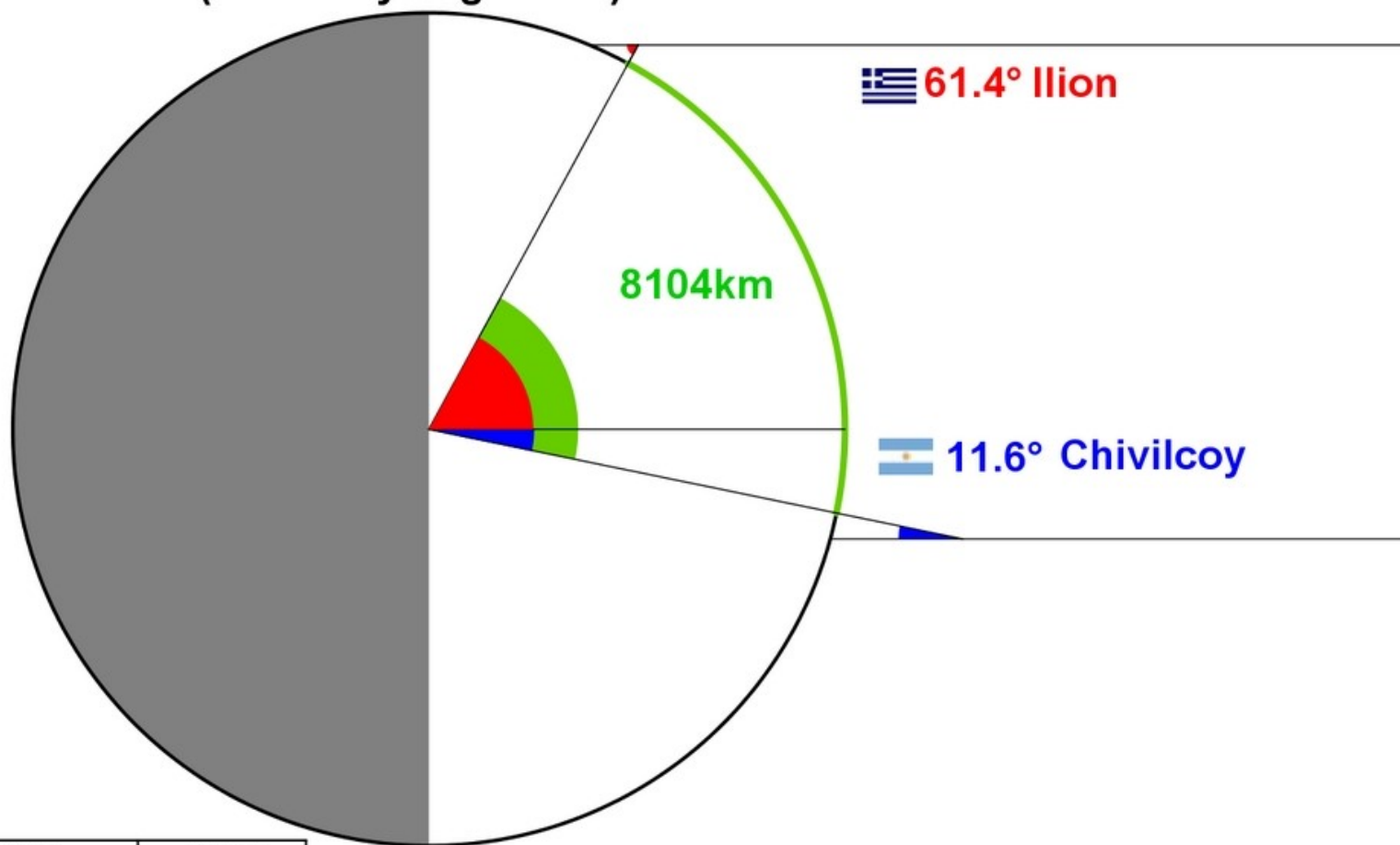


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Ilion	Greece	11th Junior High School of Ilion	38.033	23.697

Date	Gnomon	Shadow	Angle
03 December 2021	40.0cm	69.8cm	60.2°
06 December 2021	40.0cm	70.8cm	60.5°
09 December 2021	40.0cm	71.8cm	60.9°
16 December 2021	40.0cm	73.0cm	61.3°
17 December 2021	40.0cm	73.5cm	61.4°
20 December 2021	40.0cm	73.5cm	61.4°
22 December 2021	40.0cm	73.5cm	61.4°
31 December 2021	40.0cm	72.7cm	61.2°

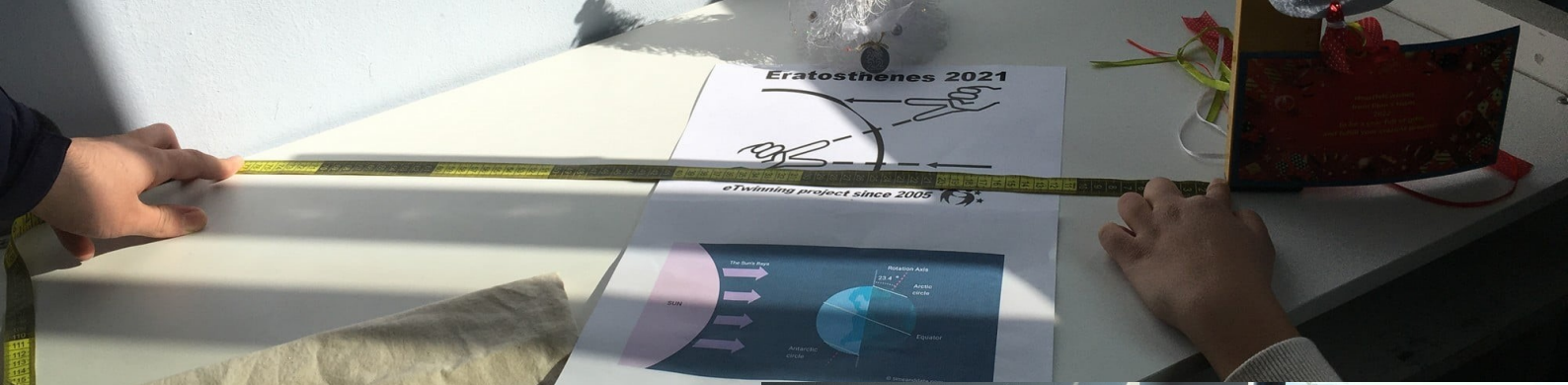
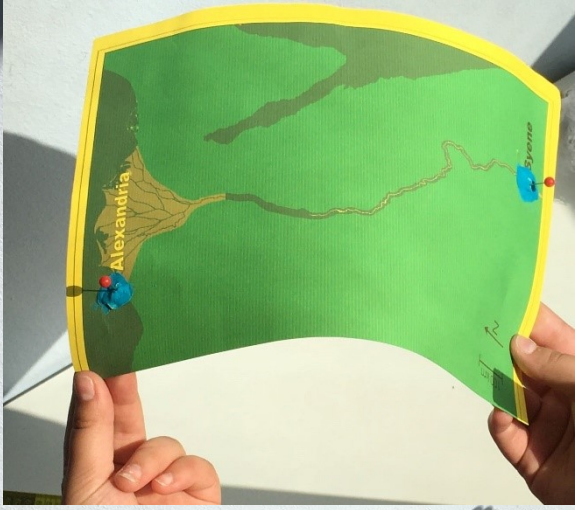
17/12/2021 (Ilion-Greece) Latitude: 38.033°

17/12/2021 (Chivilcoy-Argentina) Latitude: -34.911°




Distance	Angle
circumference	360°
8104km	61.4° + 11.6°

$$\text{circumference} = \frac{360^\circ \times 8104\text{km}}{61.4^\circ + 11.6^\circ} = 39965 \text{ km}$$



Méier, Brazil

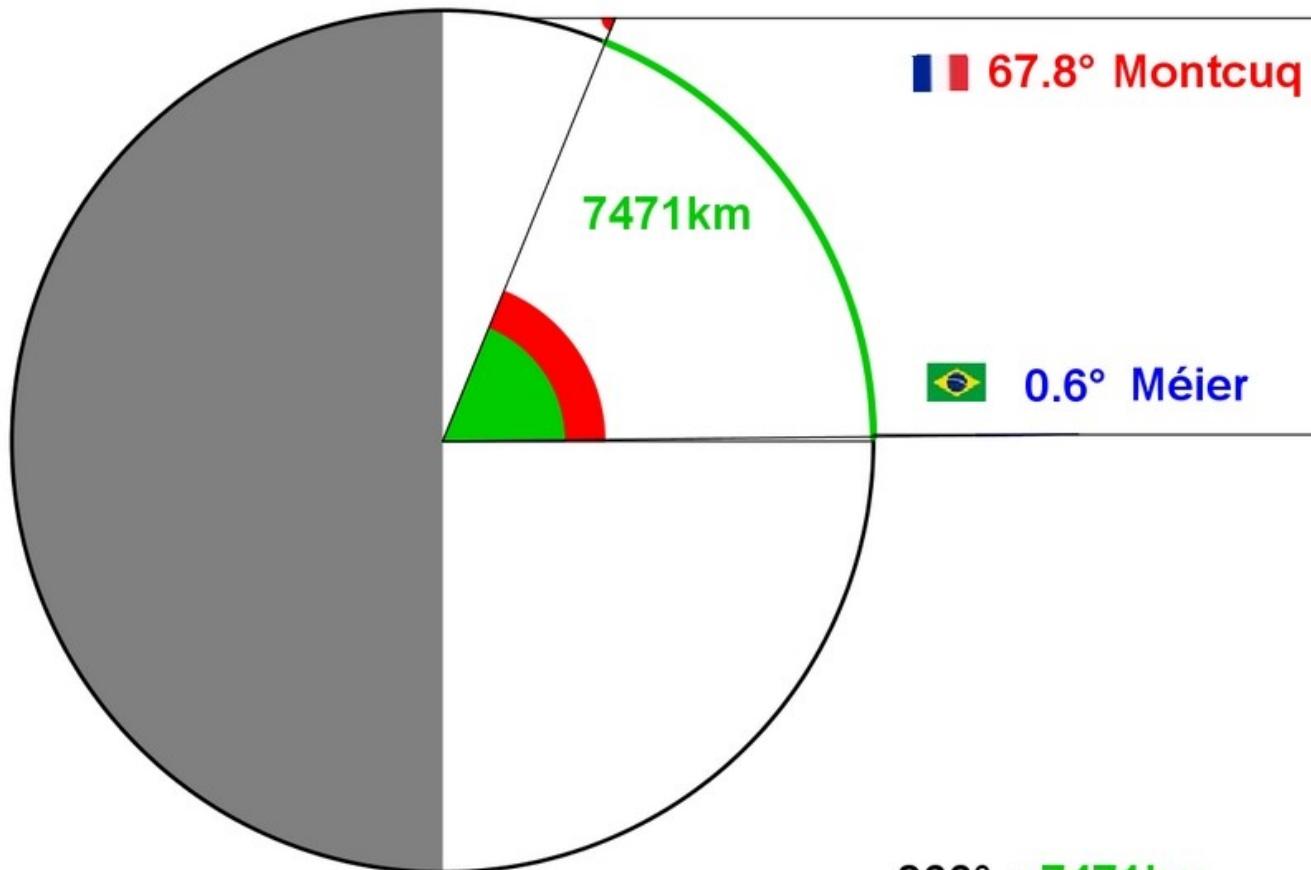


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Méier	Brazil	Escola Municipal Bento Ribeiro	-22.904	-43.280

Date	Gnomon	Shadow	Angle
02 December 2021	20.0cm	-2.0cm	-5.7°
05 December 2021	20.0cm	-1.5cm	-4.3°
06 December 2021	20.0cm	-1.5cm	-4.3°
11 December 2021	20.0cm	-0.6cm	-1.7°
20 December 2021	20.0cm	-1.0cm	-2.9°
21 December 2021	20.0cm	-1.0cm	-2.9°
22 December 2021	20.0cm	-3.0cm	-8.5°
24 December 2021	20.0cm	0.2cm	0.6°
25 December 2021	20.0cm	0.2cm	0.6°
26 December 2021	20.0cm	0.2cm	0.6°
27 December 2021	20.0cm	1.0cm	2.9°
28 December 2021	20.0cm	-0.1cm	-0.3°

25/12/2021 (Montcuq-France) Latitude: 44.34°

25/12/2021 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
7471km	67.8° - 0.6°

$$\text{circumference} = \frac{360^\circ \times 7471\text{km}}{67.8^\circ - 0.6^\circ} = 40023 \text{ km}$$



Merlara, Italy



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Merlara	Italy	Lower Secondary School "Dante Alighieri"	45.166	11.445

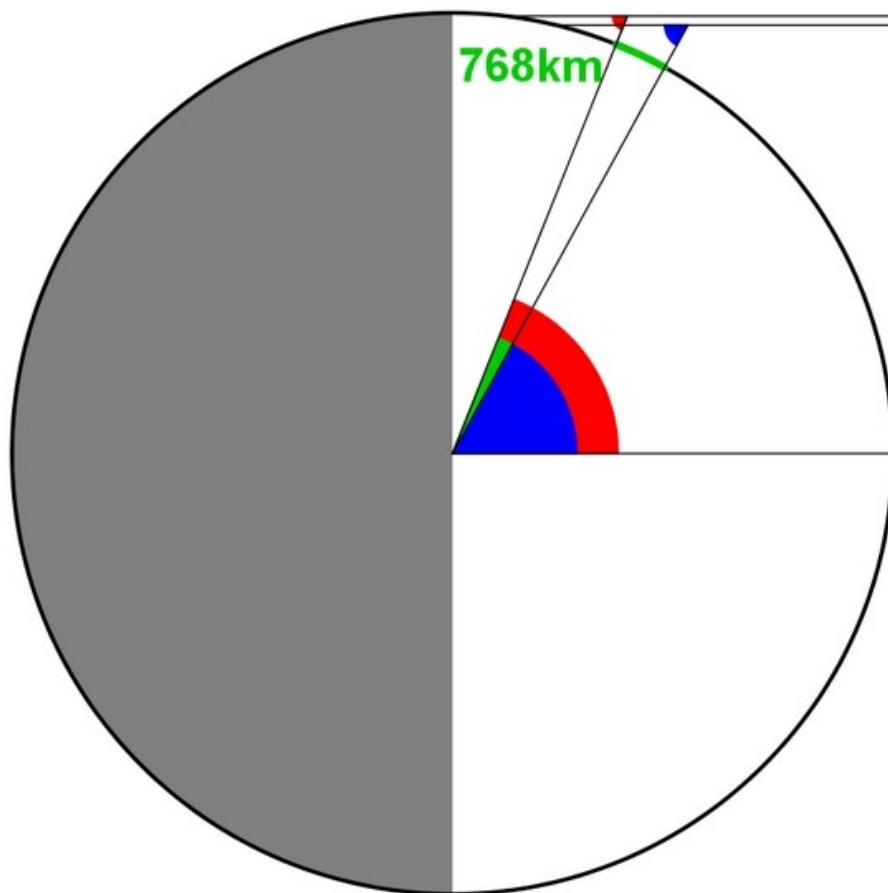
Date	Gnomon	Shadow	Angle
07 December 2021	39.5cm	95.0cm	67.4°
14 December 2021	39.5cm	99.0cm	68.2°

14/12/2021 (Merlara-Italy) Latitude: 45.166°

14/12/2021 (Aigio-Greece) Latitude: 38.252°

 **68.2° Merlara**

 **61.2° Aigio**



$$\text{circumference} = \frac{360^\circ \times 768\text{km}}{68.2^\circ - 61.2^\circ} = 39497 \text{ km}$$

Distance	Angle
circumference	360°
768km	68.2° - 61.2°



Montcuq, France

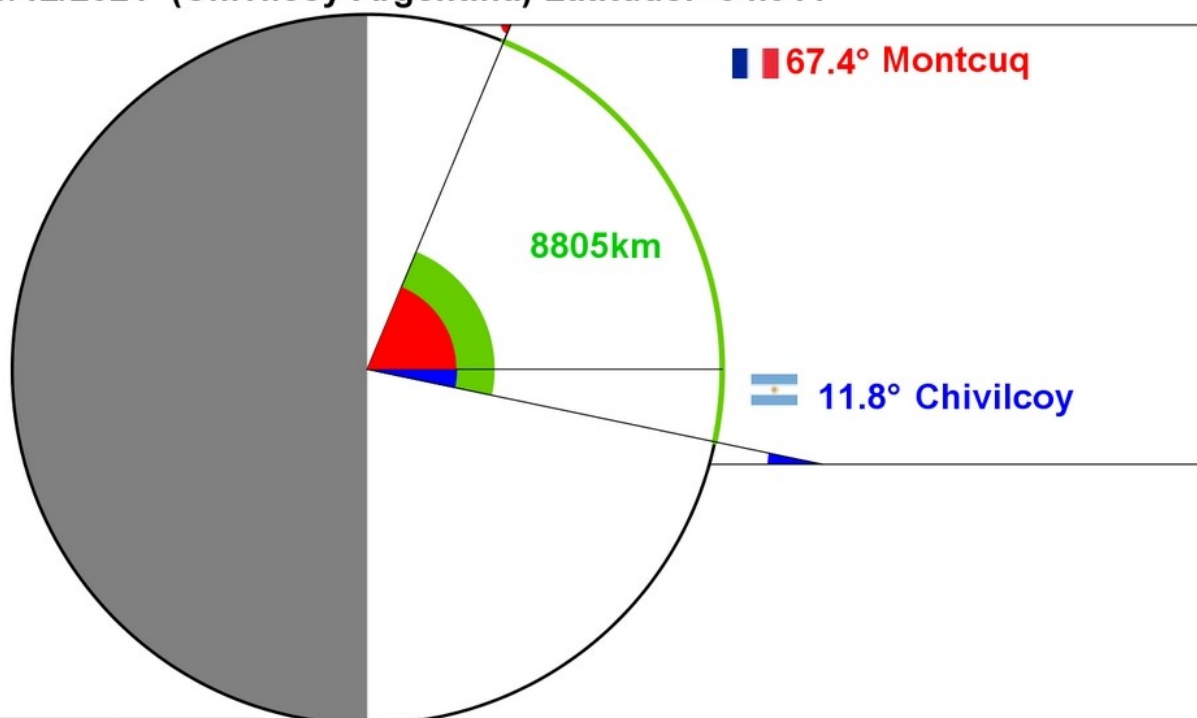


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Montcuq	France	Fondation La main à la pâte	44.340	1.210

Date	Gnomon	Shadow	Angle
03 December 2021	20.0cm	46.0cm	66.5°
04 December 2021	20.0cm	46.0cm	66.5°
05 December 2021	20.0cm	46.5cm	66.7°
06 December 2021	20.0cm	47.0cm	66.9°
08 December 2021	20.0cm	47.5cm	67.2°
11 December 2021	20.0cm	48.0cm	67.4°
13 December 2021	20cm	48.0cm	67.4°
14 December 2021	20.0cm	48.5cm	67.6°
15 December 2021	20.0cm	48.5cm	67.6°
16 December 2021	20cm	48.5cm	67.6°
17 December 2021	20.0cm	49.0cm	67.8°
18 December 2021	20cm	49cm	67.8°
19 December 2021	20.0cm	49.0cm	67.8°
20 December 2021	20.0cm	49.0cm	67.8°
21 December 2021	20.0cm	49.0cm	67.8°
22 December 2021	20.0cm	49.0cm	67.8°
23 December 2021	20.0cm	48.5cm	67.6°
24 December 2021	20.0cm	48.5cm	67.6°
25 December 2021	20.0cm	49.0cm	67.8°
26 December 2021	20.0cm	48.5cm	67.6°
27 December 2021	20.0cm	48.5cm	67.6°
30 December 2021	20.0cm	48.0cm	67.4°

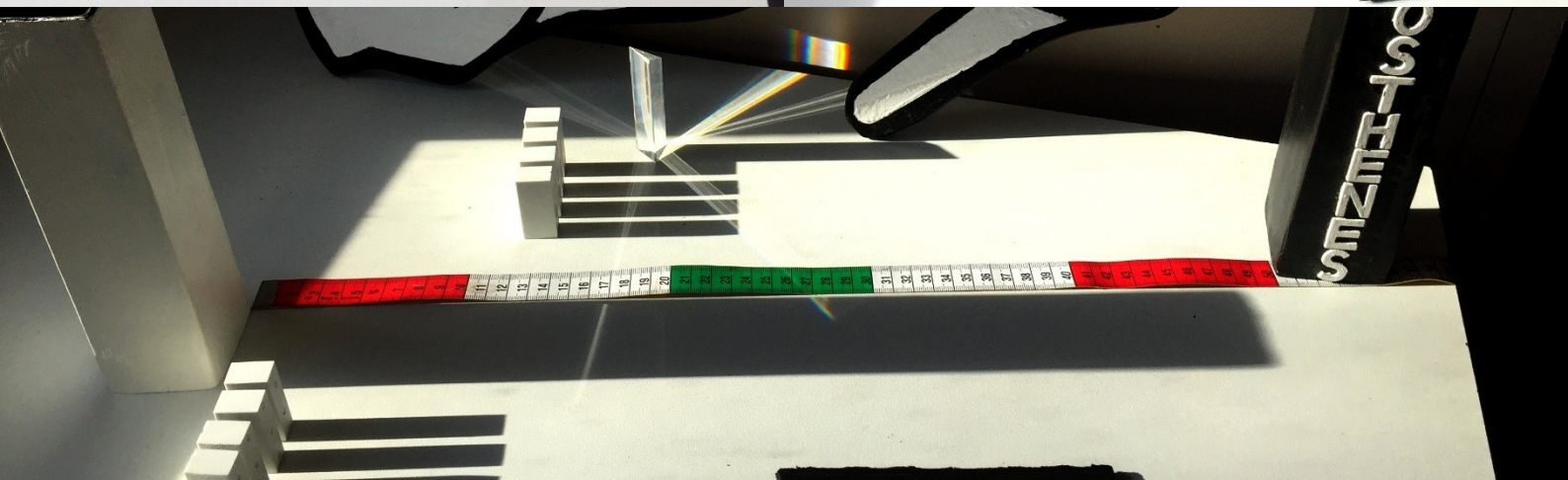
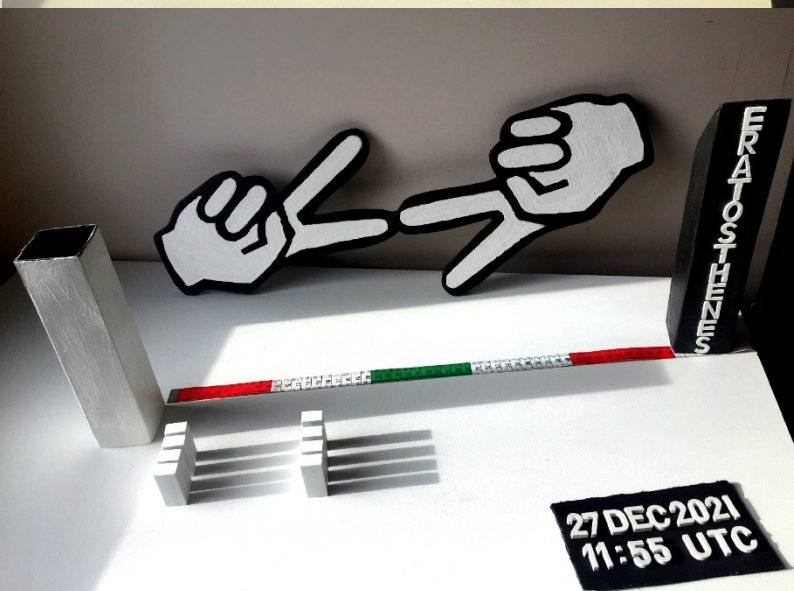
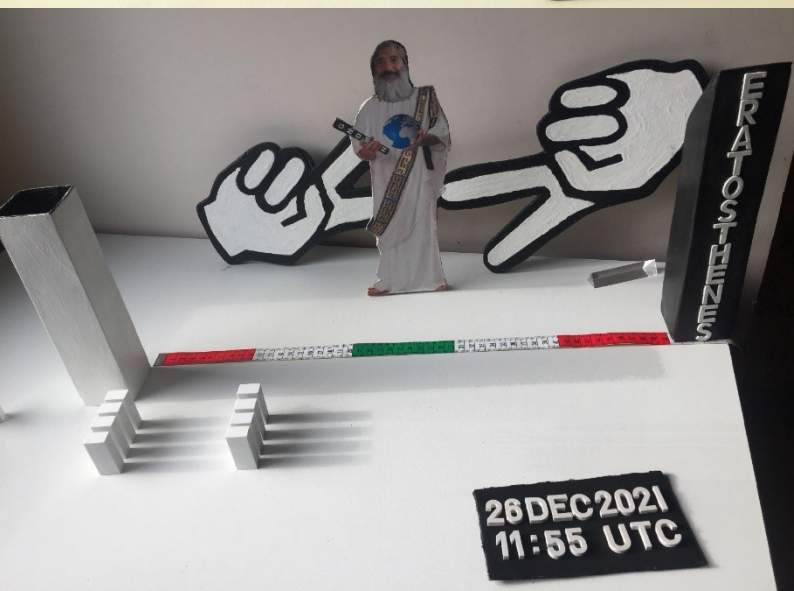
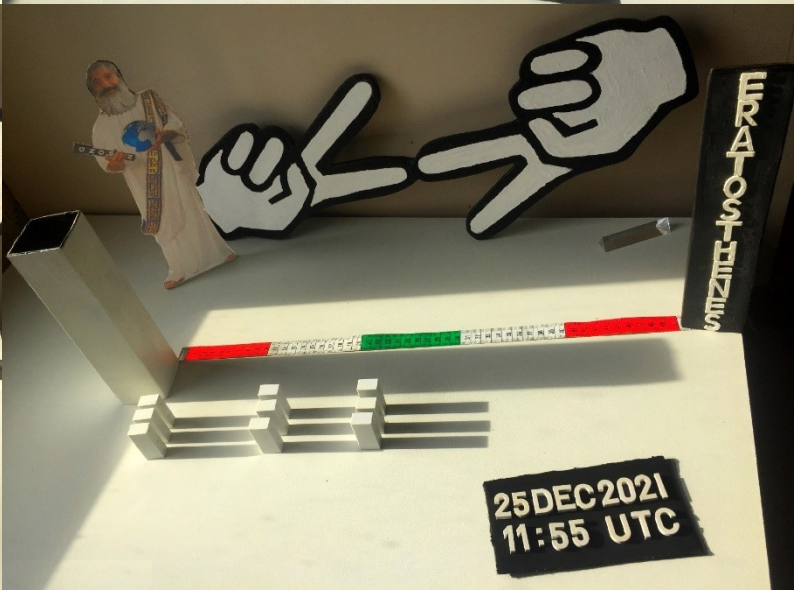
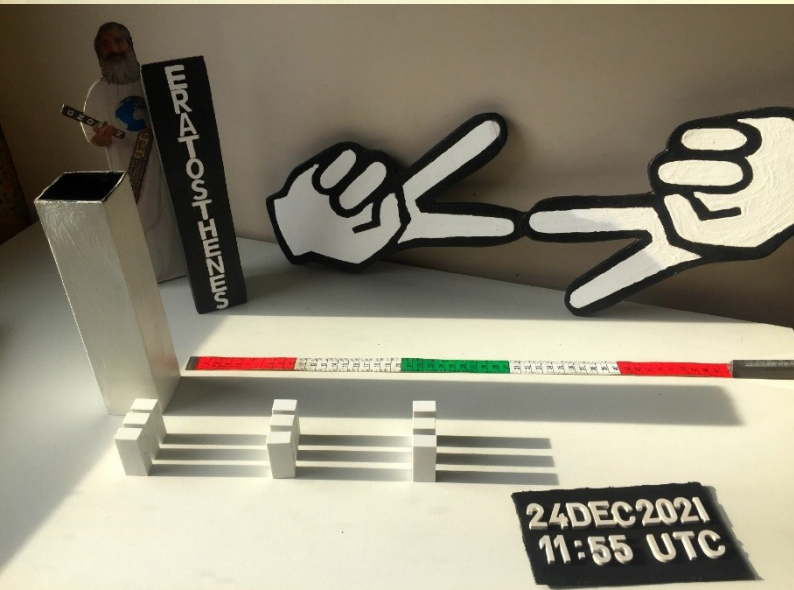
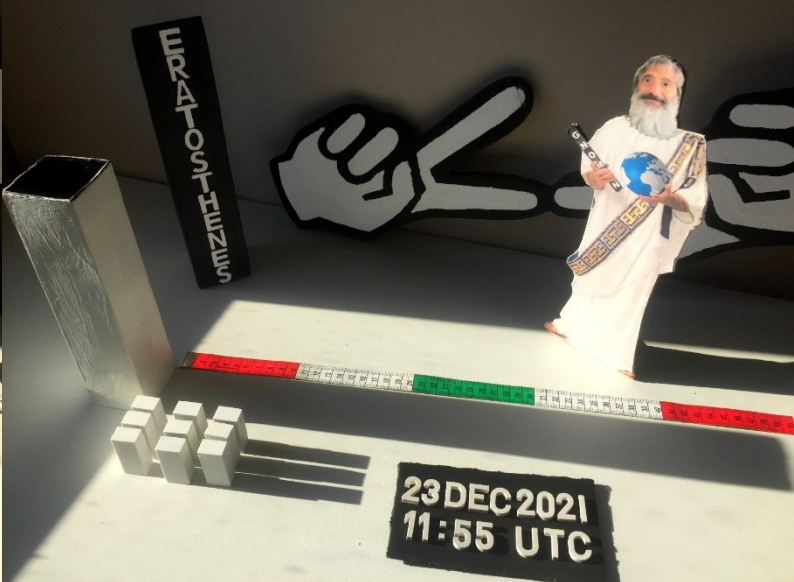
13/12/2021 (Montcuq-France) Latitude: 44.34°

13/12/2021 (Chivilcoy-Argentina) Latitude: -34.911°




Distance	Angle
circumference	360°
8805km	67.4° + 11.8°

$$\text{circumference} = \frac{360^\circ \times 8805\text{km}}{67.4^\circ + 11.8^\circ} = 40023 \text{ km}$$



Rio de Janeiro CENOM, Brazil

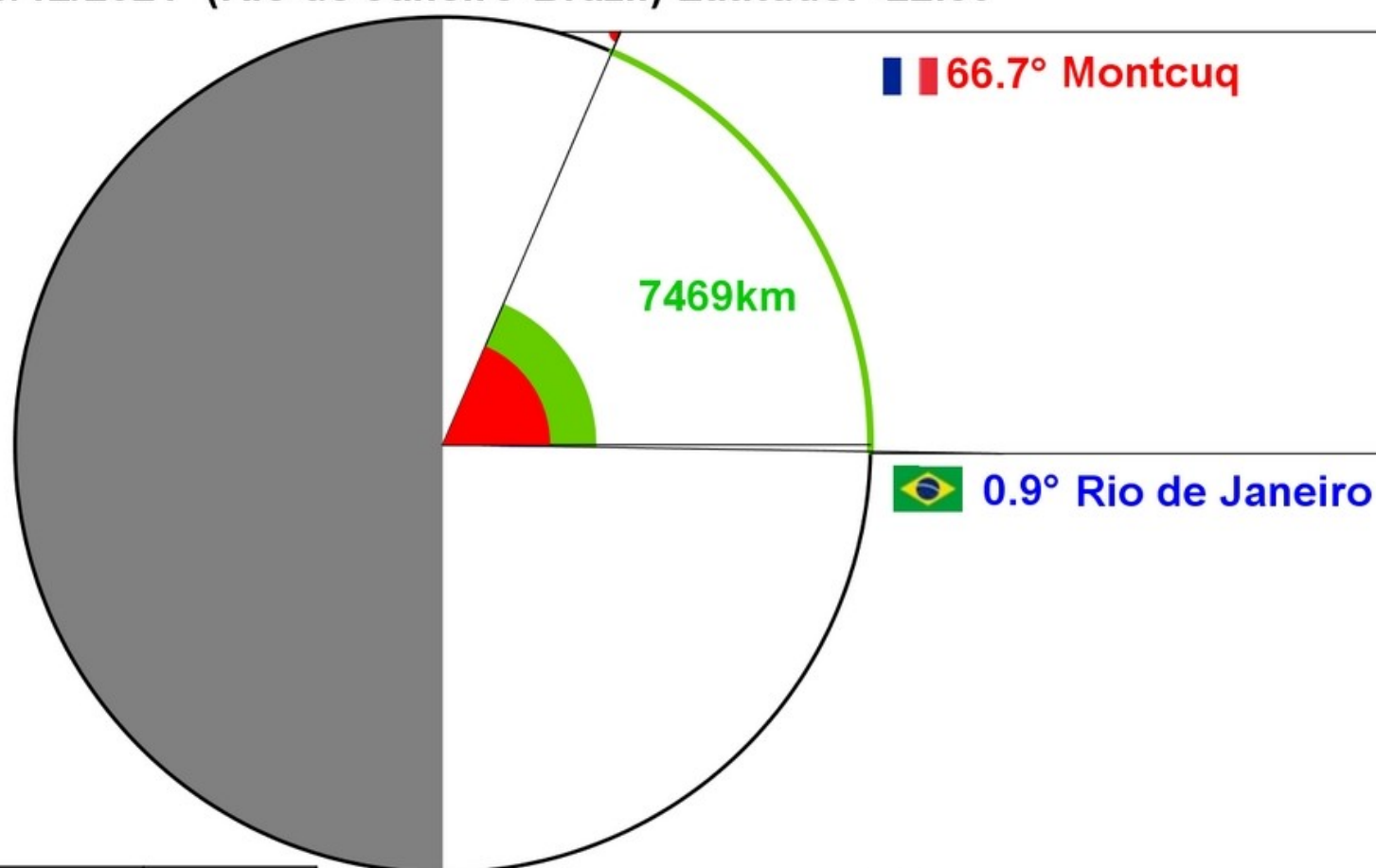


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317

Date	Gnomon	Shadow	Angle
02 December 2021	20.0cm	-2.0cm	-5.7°
05 December 2021	13.0cm	-0.2cm	-0.9°
06 December 2021	20.0cm	-1.7cm	-4.9°
10 December 2021	20.0cm	-1.0cm	-2.9°
13 December 2021	20cm	-1.0cm	-2.9°
15 December 2021	20cm	-1.0cm	-2.9°
20 December 2021	20.0cm	0.0cm	0.0°
22 December 2021	20.0cm	0.0cm	0.0°

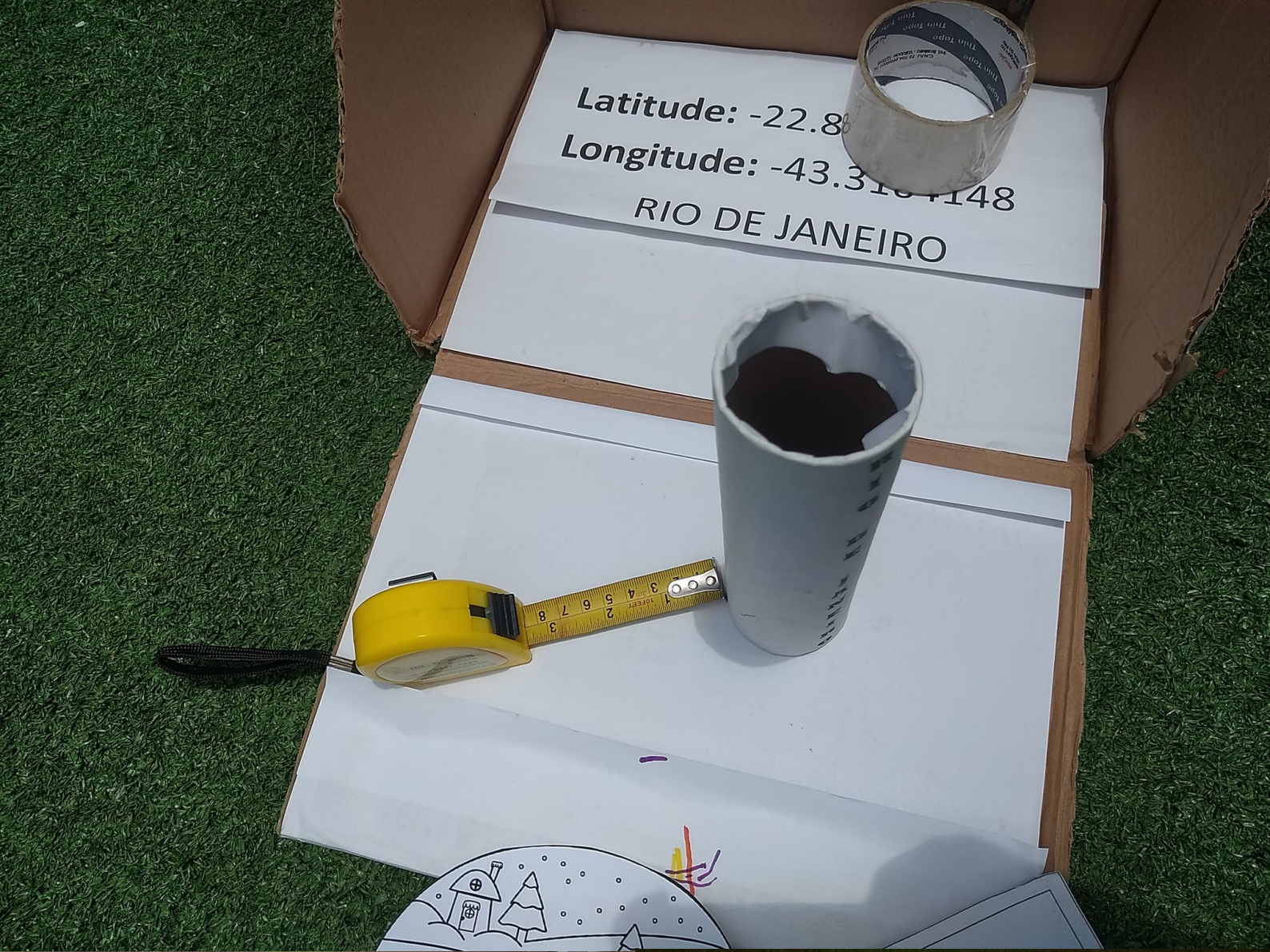
05/12/2021 (Montcuq-France) Latitude: 44.34°

05/12/2021 (Rio de Janeiro-Brazil) Latitude: -22.89°



Distance	Angle
circumference	360°
7469km	66.7° + 0.9°

$$\text{circumference} = \frac{360^\circ \times 7469\text{km}}{66.7^\circ + 0.9^\circ} = 39776 \text{ km}$$



Sault Sainte Marie, USA

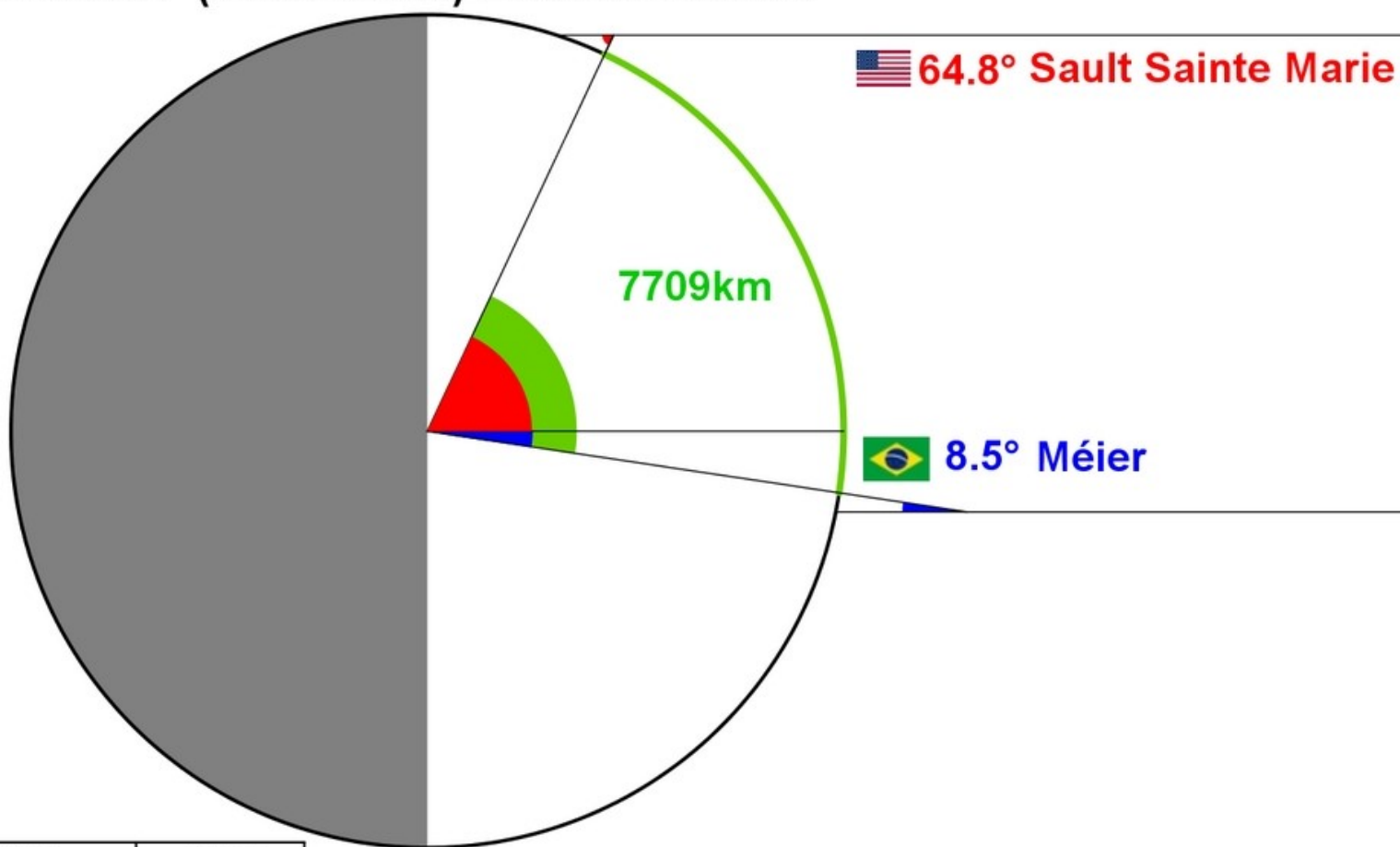


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Sault Sainte Marie	MI USA	AECM Carribbean University	46.480	-84.350

Date	Gnomon	Shadow	Angle
22 December 2021	30.5cm	64.8cm	64.8°

22/12/2021 (Sault Sainte Marie-USA) Latitude: 46.48°

22/12/2021 (Méier-Brazil) Latitude: -22.904°



Distance	Angle
circumference	360°
7709km	64.8° + 8.5°

$$\text{circumference} = \frac{360^\circ \times 7709\text{km}}{64.8^\circ + 8.5^\circ} = 37861 \text{ km}$$



