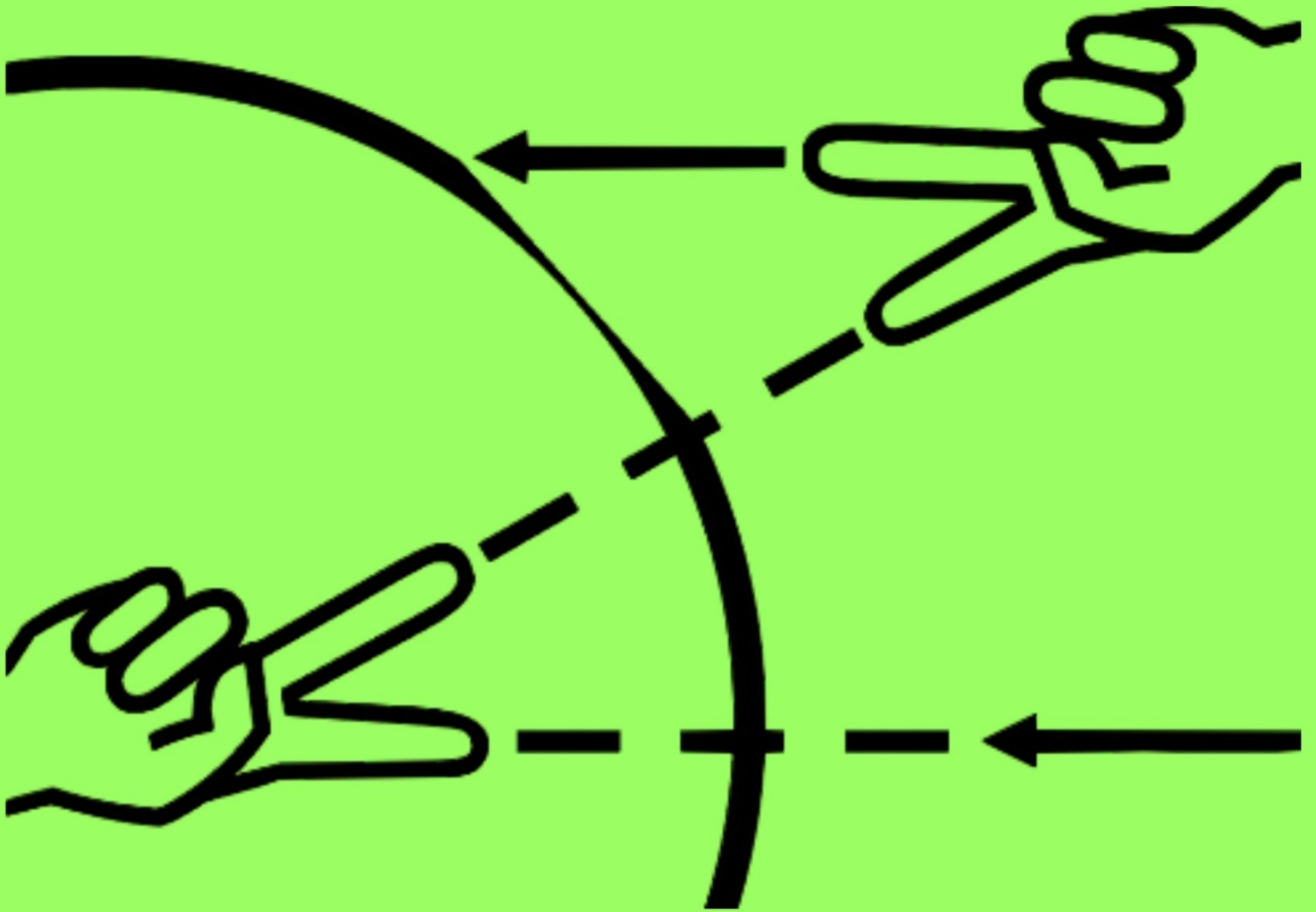


Eratostrhenes



4 Continents

10 Countries

20 Schools

78 Measures

4 Continents

10 Countries

20 Schools

78 Measures

BRAZIL (3)

Itatiaia, Piranguinho, Rio de Janeiro

COLOMBIA (1)

Guarne

FRANCE (1)

Lafrançaise

GERMANY (2)

Bonn, Köln

GREECE (3)

Aigio, Athens, Petropouli

INDIA (1)

Hyderabad

ROMANIA (2)

Busteni, Mărgineni

SPAIN (1)

Úbeda

TUNISIA (1)

Bizerte

VIETNAM (5)

Biên Hòa, Hà Nội Academy, Hồ Chí Minh City NT,
Hồ Chí Minh City VAIS, Nam Định

Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079
	Athens	Greece	Exp school agion anargyron	38.027	23.726
	Biên Hòa LTV	Việt Nam	LTV school for the gifted	10.957	106.864
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868
	Bonn	Germany	Experimental school Agion Anargyron	50.734	7.100
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449
	Hà Nội Academy	Việt Nam	Trường Song Ngữ Hanoi Academy	21.073	105.803
	Hồ Chí Minh City NT	Việt Nam	Nguyen Trai High School	10.760	106.712
	Hồ Chí Minh City VAIS	Vietnam	Vietnam Australia international school	10.766	106.663
	Hyderabad	India	Space Adhyaan	17.385	78.487
	Itataia	Brazil	Centro Educacional Nosso Mundo	-22.491	-44.559
	Köln	Germany	Experimental school Agion Anargyron	50.941	6.958
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237
	Mărgineni	Romania	Gh. Popescu School	44.533	24.554
	Nam Định	Việt Nam	Mỹ Lộc High School	20.444	106.129
	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
	Úbeda	Spain	Colegio Salesiano Santo Domingo Savio	38.017	-3.367

Aigio, Greece

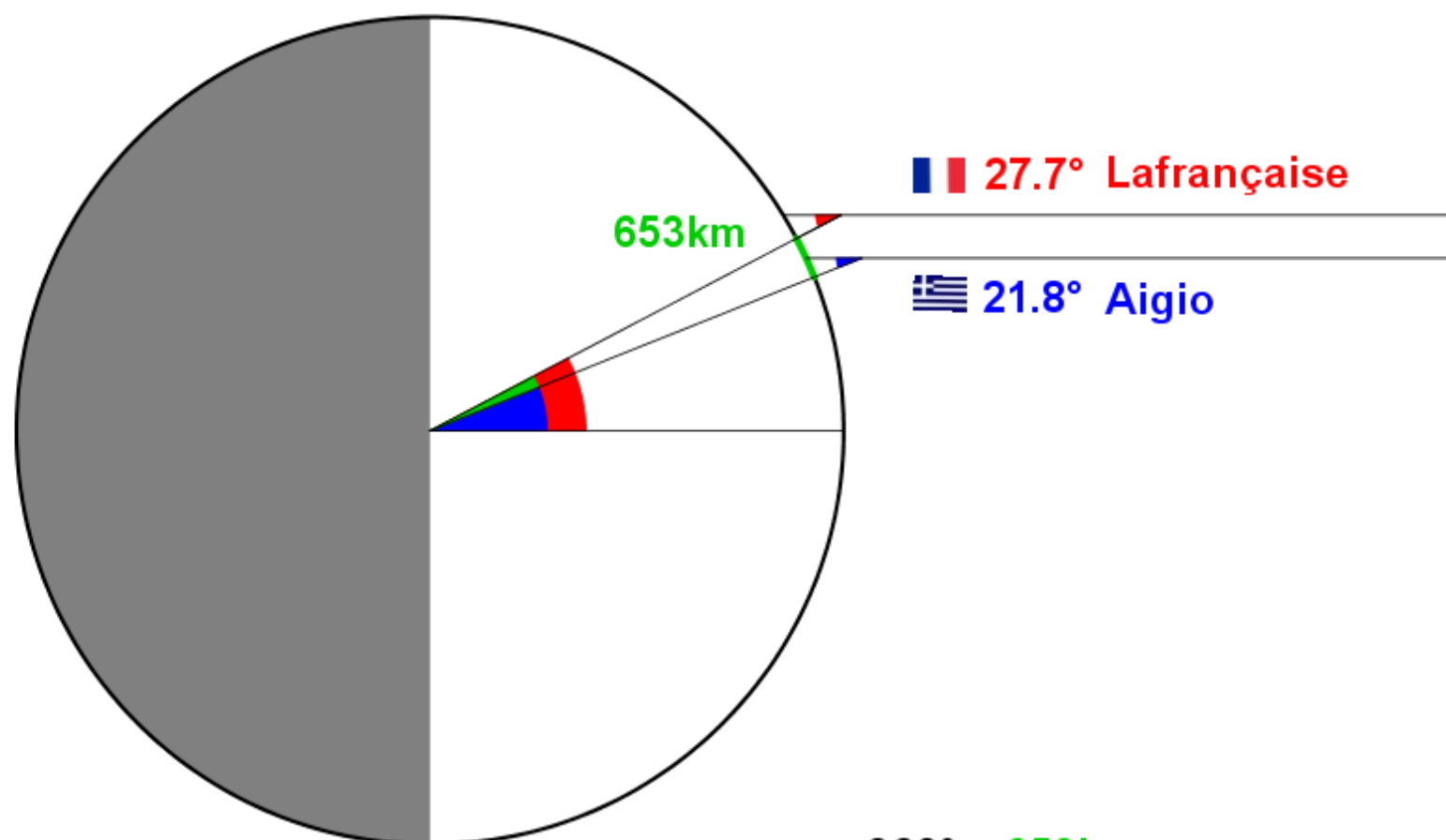


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Aigio	Greece	1st High School of Aigio	38.252	22.079

Date	Gnomon	Shadow	Angle
06 May 2019	30cm	12cm	21.8°
07 May 2019	30cm	11.8cm	21.5°
16 May 2019	30.0cm	10.7cm	19.6°

06/05/2019 (Lafrançaise-France) Latitude: 44.127°

06/05/2019 (Aigio-Greece) Latitude: 38.252°



Distance	Angle
circumference	360°
653km	27.7° - 21.8°

$$\text{circumference} = \frac{360^\circ \times 653\text{km}}{27.7^\circ - 21.8^\circ} = 39844 \text{ km}$$



Athens, Greece

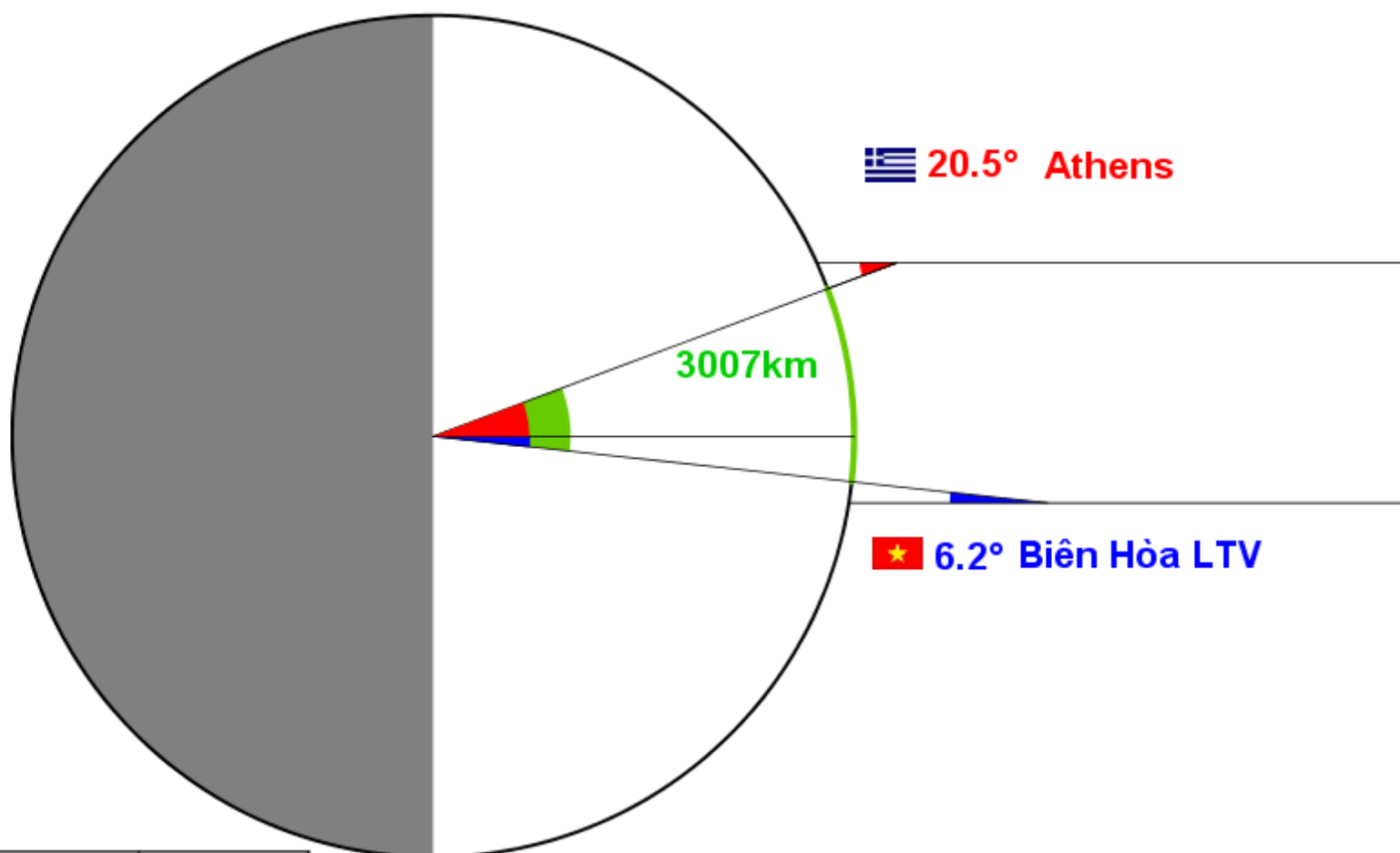


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Athens	Greece	Exp school agion anargyron	38.027	23.726

Date	Gnomon	Shadow	Angle
07 May 2019	246cm	92cm	20.5°

07/05/2019 (Athens-Greece) Latitude: 38.027°

07/05/2019 (Biên Hòa LTV-Việt Nam) Latitude: 10.957°



$$\text{circumference} = \frac{360^\circ \times 3007\text{km}}{20.5^\circ + 6.2^\circ} = 40544 \text{ km}$$

Distance	Angle
circumference	360°
3007km	20.5° + 6.2°



Biên Hòa LTV, Việt Nam

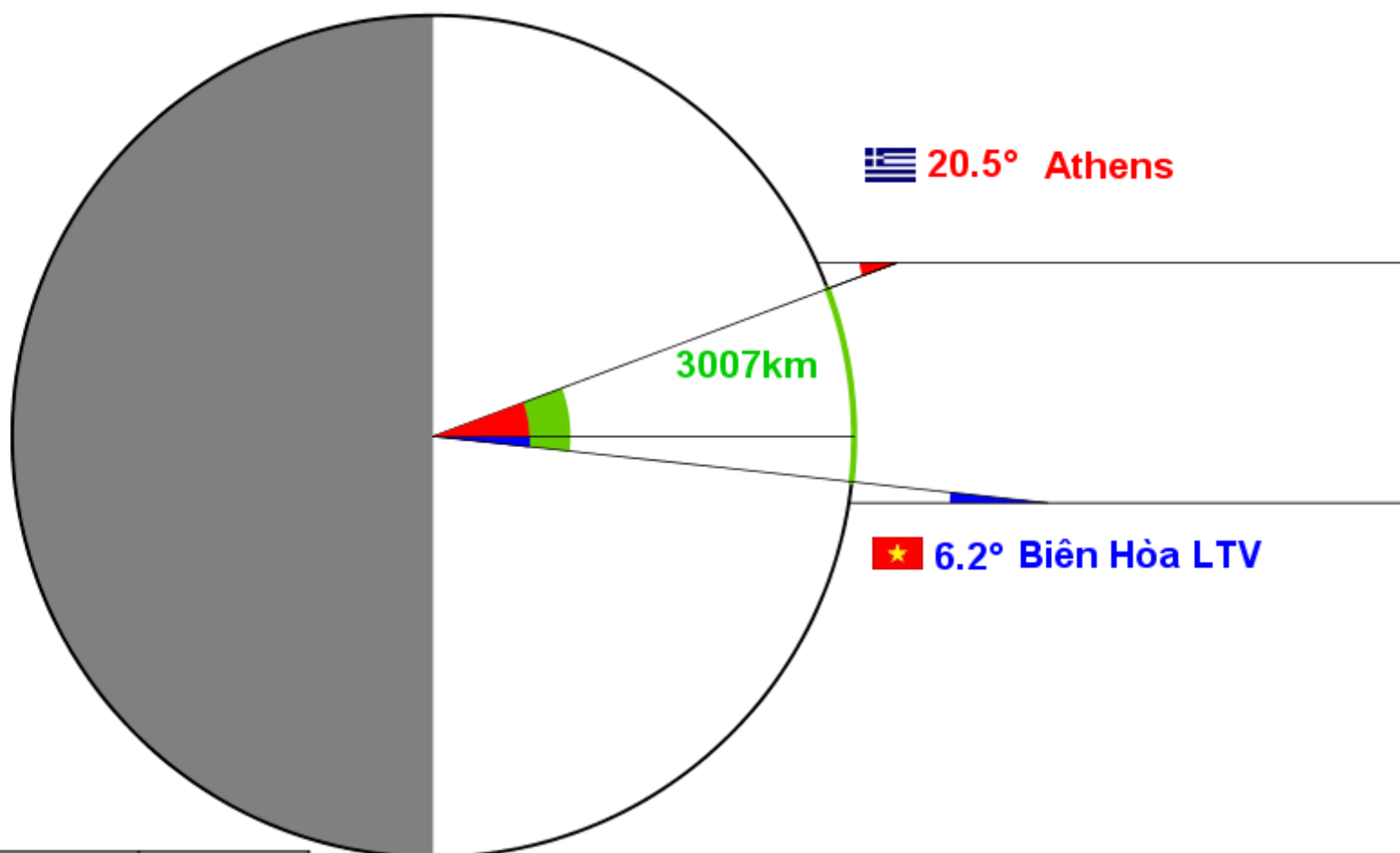


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Biên Hòa LTV	Việt Nam	LTV school for the gifted	10.957	106.864

Date	Gnomon	Shadow	Angle
06 May 2019	89.7cm	-10cm	-6.4°
07 May 2019	45cm	-4.9cm	-6.2°
08 May 2019	45.0cm	-4.6cm	-5.8°

07/05/2019 (Athens-Greece) Latitude: 38.027°

07/05/2019 (Biên Hòa LTV-Việt Nam) Latitude: 10.957°

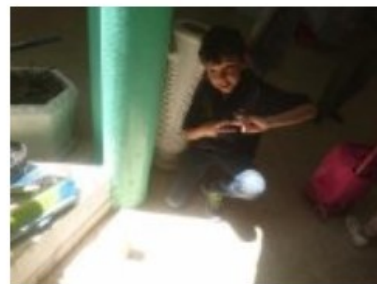


$$\text{circumference} = \frac{360^\circ \times 3007\text{km}}{20.5^\circ + 6.2^\circ} = 40544 \text{ km}$$

Distance	Angle
circumference	360°
3007km	20.5° + 6.2°



Bizerte, Tunisia

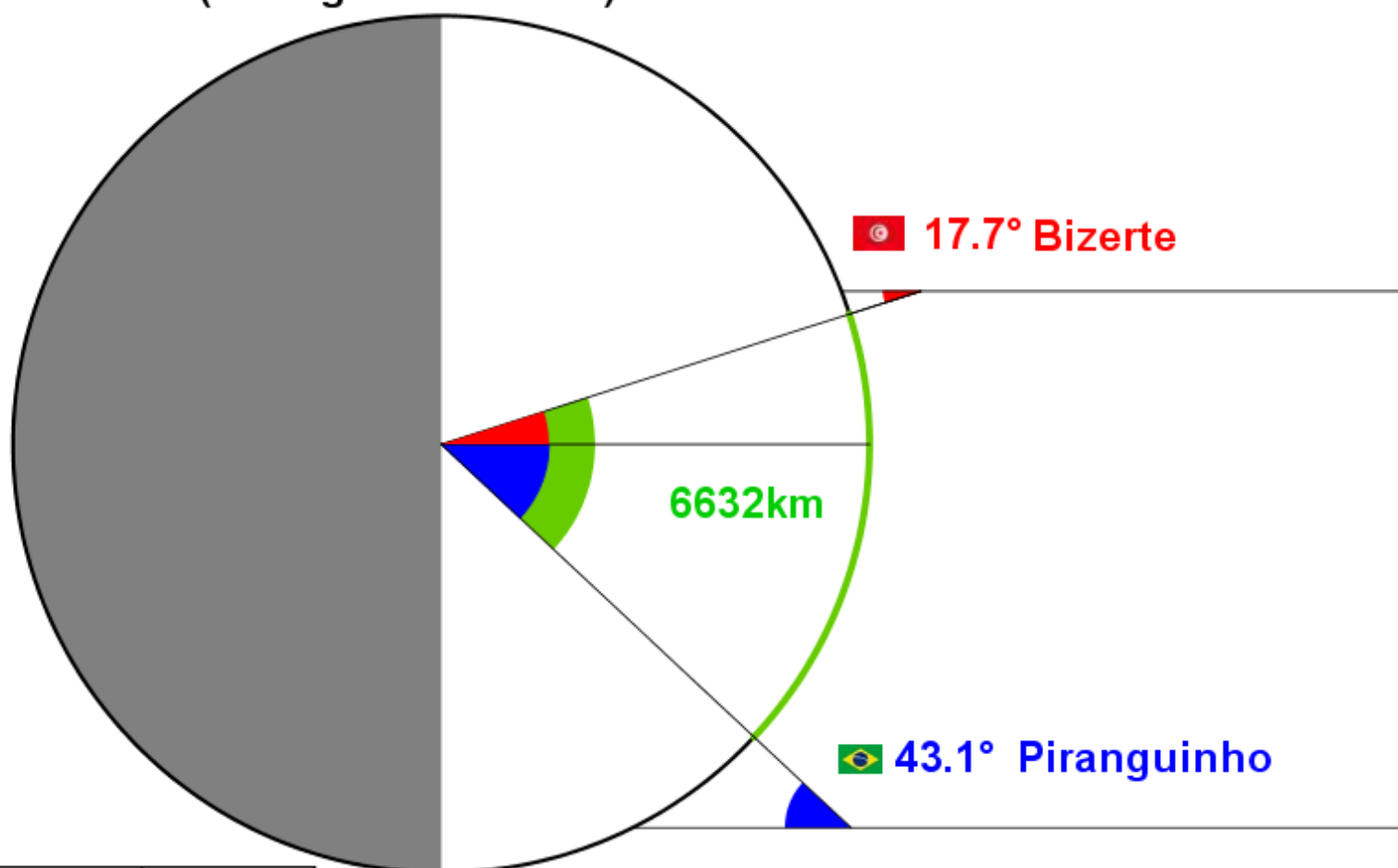


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Bizerte	Tunisia	Ecole Primaire Raouabi	37.284	9.868

Date	Gnomon	Shadow	Angle
20 May 2019	34.0cm	34.5cm	45.4°
21 May 2019	48.0cm	17.5cm	20.0°
23 May 2019	48.5cm	15.5cm	17.7°
24 May 2019	23.5cm	6.5cm	15.5°

23/05/2019 (Bizerte-Tunisia) Latitude: 37.284°

23/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



Distance	Angle
circumference	360°
6632km	17.7°+43.1°

$$\text{circumference} = \frac{360^\circ \times 6632\text{km}}{17.7^\circ + 43.1^\circ} = 39268 \text{ km}$$



Bonn, Germany

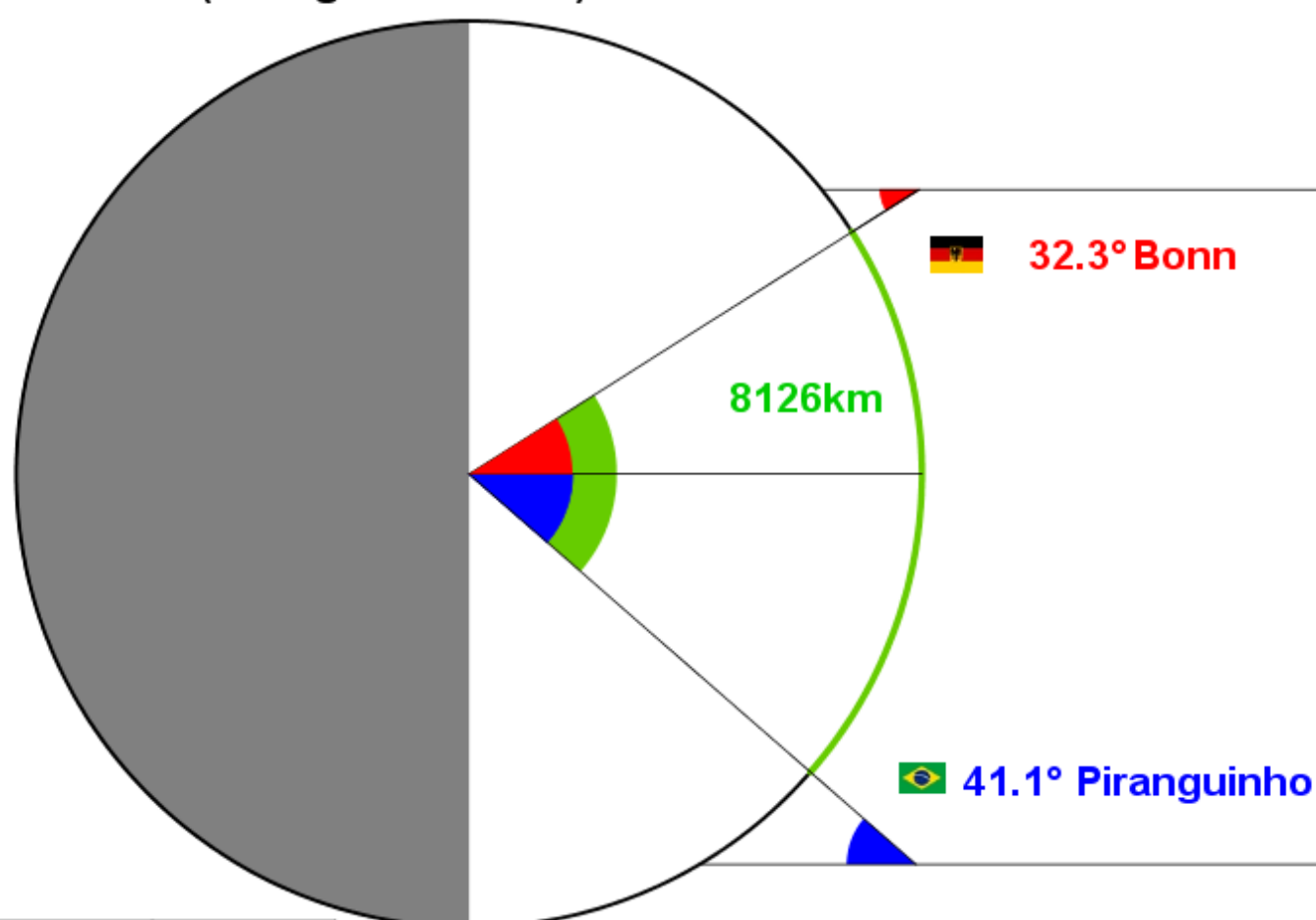


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Bonn	Germany	Experimental school Agion Anargyron	50.734	7.100

Date	Gnomon	Shadow	Angle
15 May 2019	30.0cm	19.0cm	32.3°

15/05/2019 (Bonn-Germany) Latitude: 50.734°

15/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



$$\text{circumference} = \frac{360^\circ \times 8126\text{km}}{32.3^\circ + 41.1^\circ} = 39855 \text{ km}$$

Distance	Angle
circumference	360°
8126km	32.3° + 41.1°



Busteni, Romania

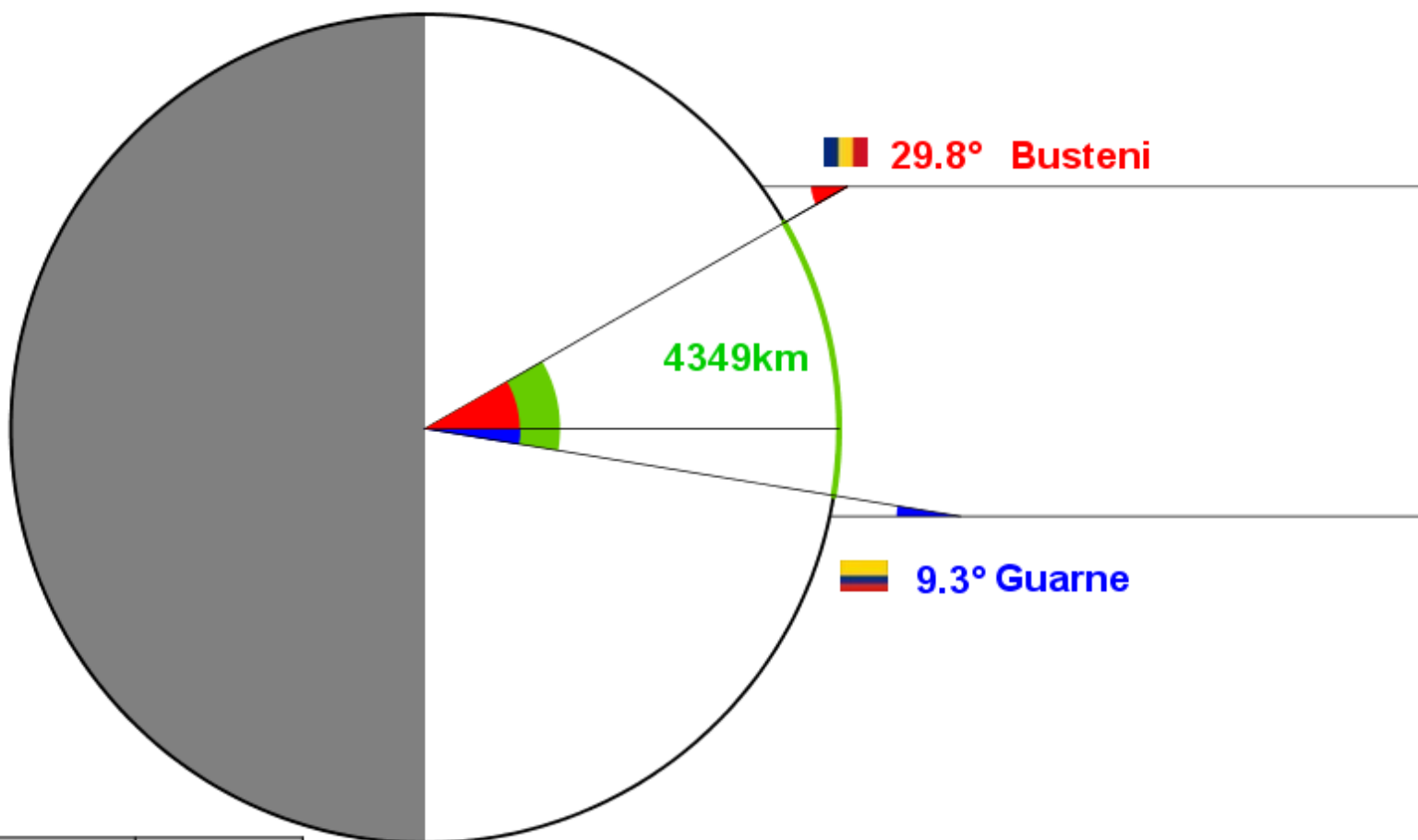


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Busteni	Romania	Colegiul Ion Kalinderu	45.416	25.535

Date	Gnomon	Shadow	Angle
02 May 2019	19.2cm	11.0cm	29.8°
03 May 2019	24.8cm	14cm	29.4°
06 May 2019	22cm	12cm	28.6°
09 May 2019	100cm	52.4cm	27.7°
10 May 2019	100.0cm	51.8cm	27.4°
13 May 2019	100.0cm	50.4cm	26.7°
14 May 2019	24.0cm	12.0cm	26.6°
15 May 2019	22.2cm	11.0cm	26.4°
20 May 2019	100.0cm	47.0cm	25.2°
22 May 2019	100.0cm	46.2cm	24.8°
28 May 2019	100.0cm	44cm	23.7°
29 May 2019	100cm	43.7cm	23.6°

02/05/2019 (Busteni-Romania) Latitude: 45.416°

02/05/2019 (Guarne-Colombia) Latitude: 6.274°



$$\text{circumference} = \frac{360^\circ \times 4349\text{km}}{29.8^\circ + 9.3^\circ} = 40042 \text{ km}$$

Distance	Angle
circumference	360°
4349km	29.8° + 9.3°



Guarne, Colombia

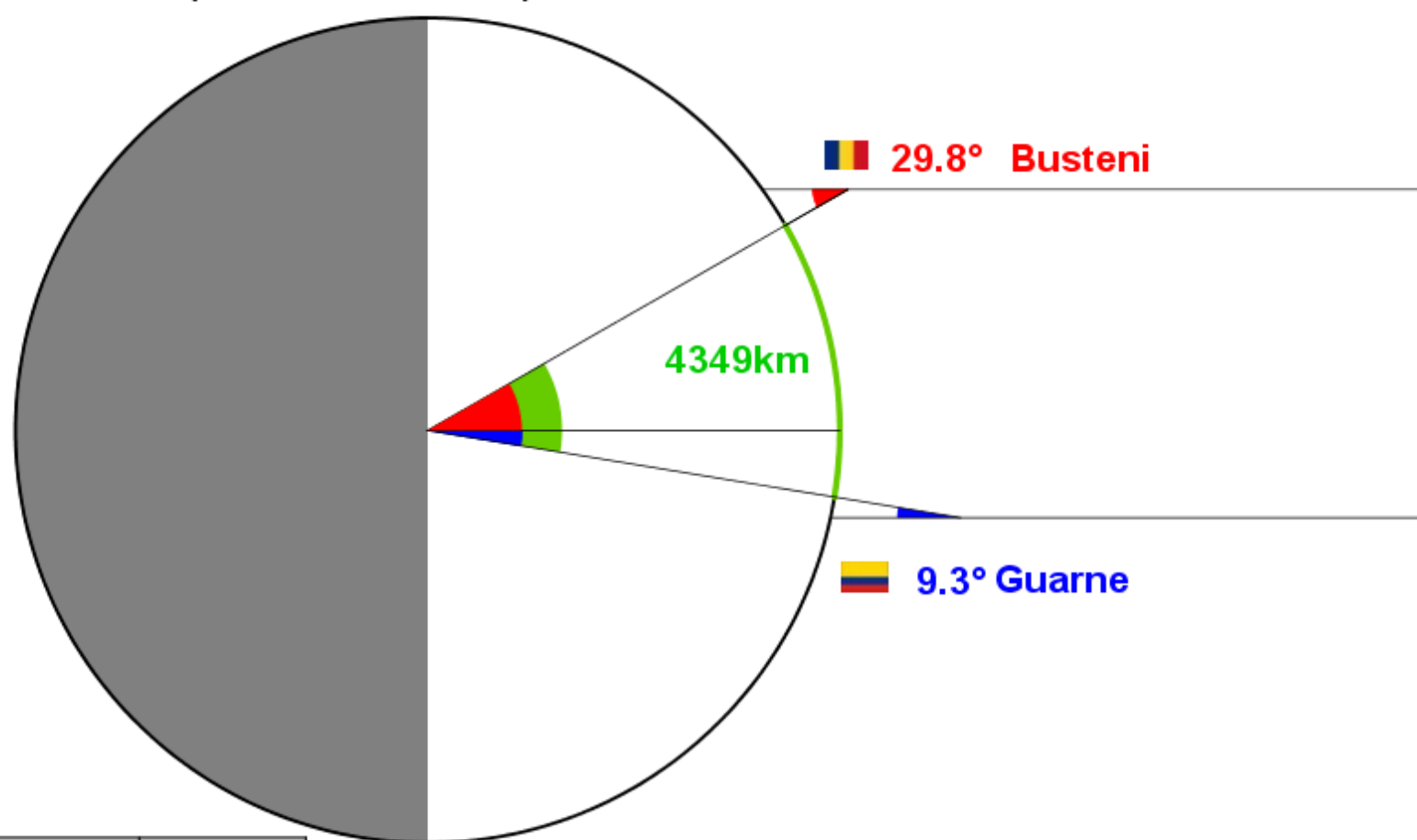


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Guarne	Colombia	Grupo Astrofanáticos	6.274	-75.449

Date	Gnomon	Shadow	Angle
01 May 2019	30.5cm	-4.8cm	-8.9°
02 May 2019	30.5cm	-5.0cm	-9.3°
03 May 2019	30.5cm	-5.1cm	-9.5°
09 May 2019	30.5cm	-5.9cm	-10.9°
16 May 2019	30.5cm	-6.9cm	-12.7°
20 May 2019	30.5cm	-7.4cm	-13.6°
22 May 2019	30.5cm	-7.8cm	-14.3°

02/05/2019 (Busteni-Romania) Latitude: 45.416°

02/05/2019 (Guarne-Colombia) Latitude: 6.274°



Distance	Angle
circumference	360°
4349km	29.8° + 9.3°

$$\text{circumference} = \frac{360^\circ \times 4349\text{km}}{29.8^\circ + 9.3^\circ} = 40042 \text{ km}$$



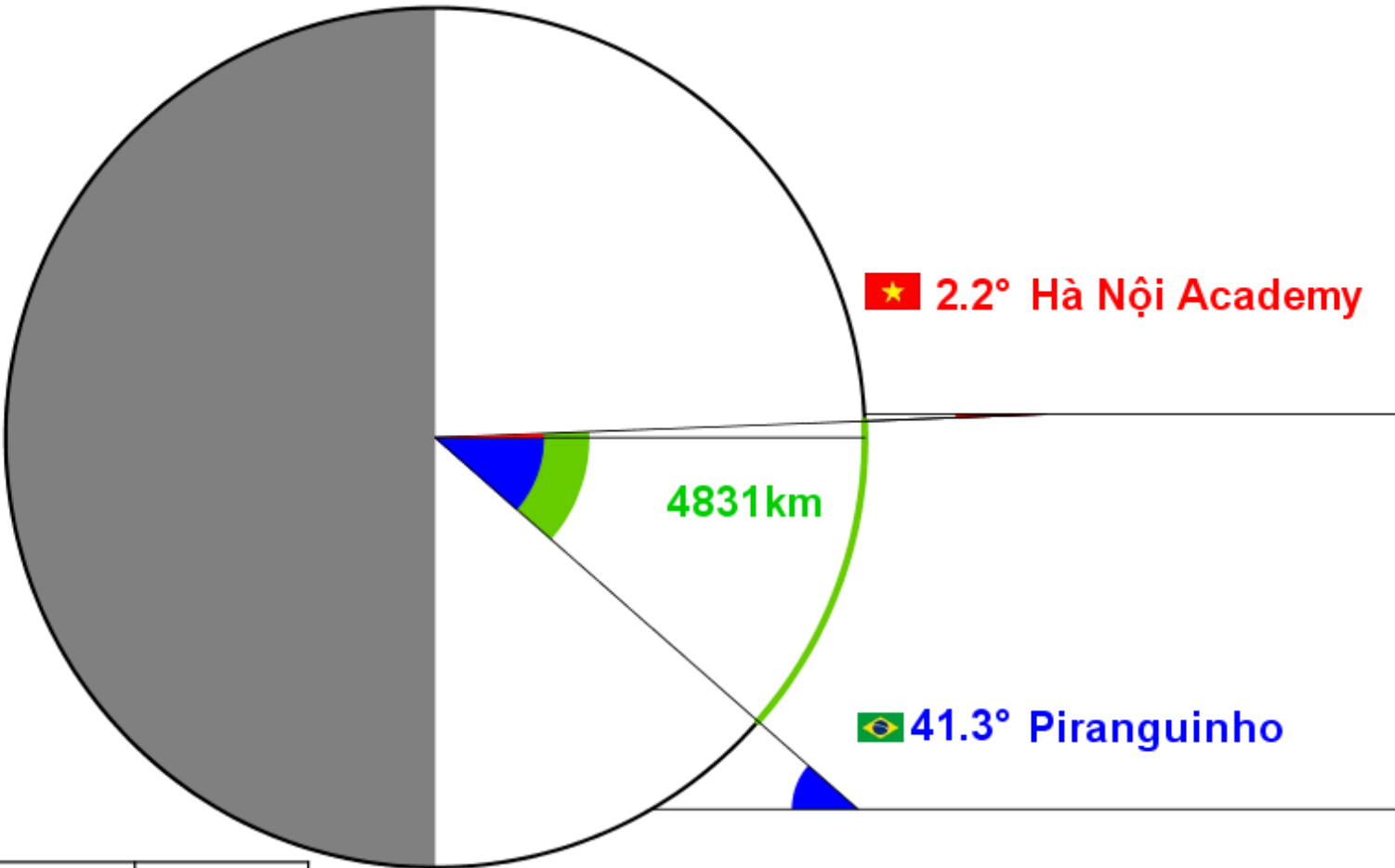


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Hà Nội Academy	Việt Nam	Trường Song Ngữ Hanoi Academy	21.073	105.803

Date	Gnomon	Shadow	Angle
13 May 2019	88.0cm	4.5cm	2.9°
15 May 2019	56.5cm	2.4cm	2.4°
16 May 2019	56.5cm	2.2cm	2.2°

16/05/2019 (Hà Nội Academy-Việt Nam) Latitude: 21.073°

16/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



Distance	Angle
circumference	360°
4831km	2.2° + 41.3°

circumference = $\frac{360^\circ \times 4831\text{km}}{2.2^\circ + 41.3^\circ} = 39981 \text{ km}$



Hồ Chí Minh City NT, Việt Nam

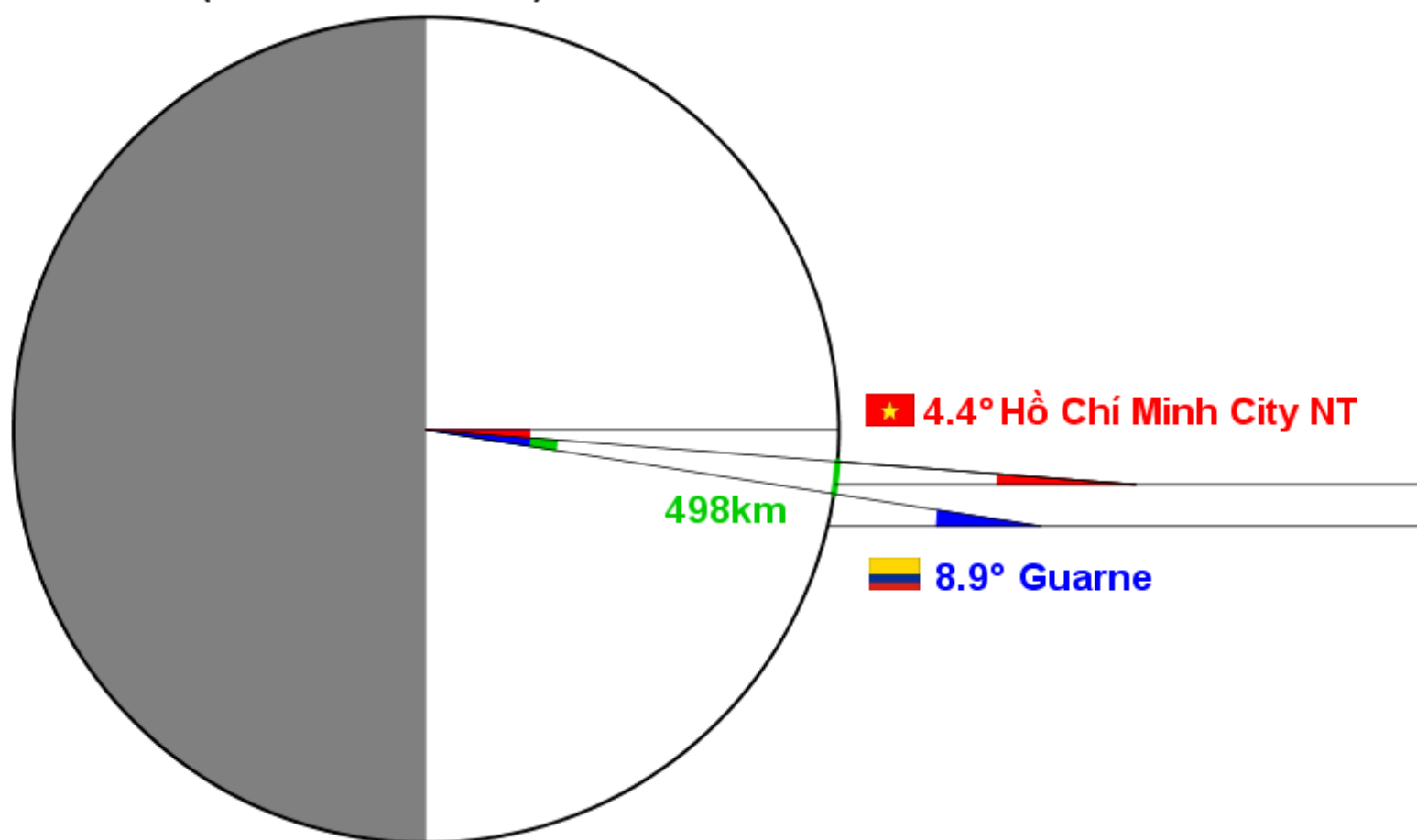


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Hồ Chí Minh City NT	Việt Nam	Nguyen Trai High School	10.760	106.712

Date	Gnomon	Shadow	Angle
01 May 2019	77.3cm	-6.0cm	-4.4°
04 May 2019	100cm	-8.8cm	-5°
06 May 2019	100cm	-8.8cm	-5°

01/05/2019 (Hồ Chí Minh City NT-Việt Nam) Latitude: 10.76°

01/05/2019 (Guarne-Colombia) Latitude: 6.274°



Distance	Angle
circumference	360°
498km	8.9° - 4.4°

$$\text{circumference} = \frac{360^\circ \times 498\text{km}}{8.9^\circ - 4.4^\circ} = 39840 \text{ km}$$



Hồ Chí Minh City VAIS, Vietnam

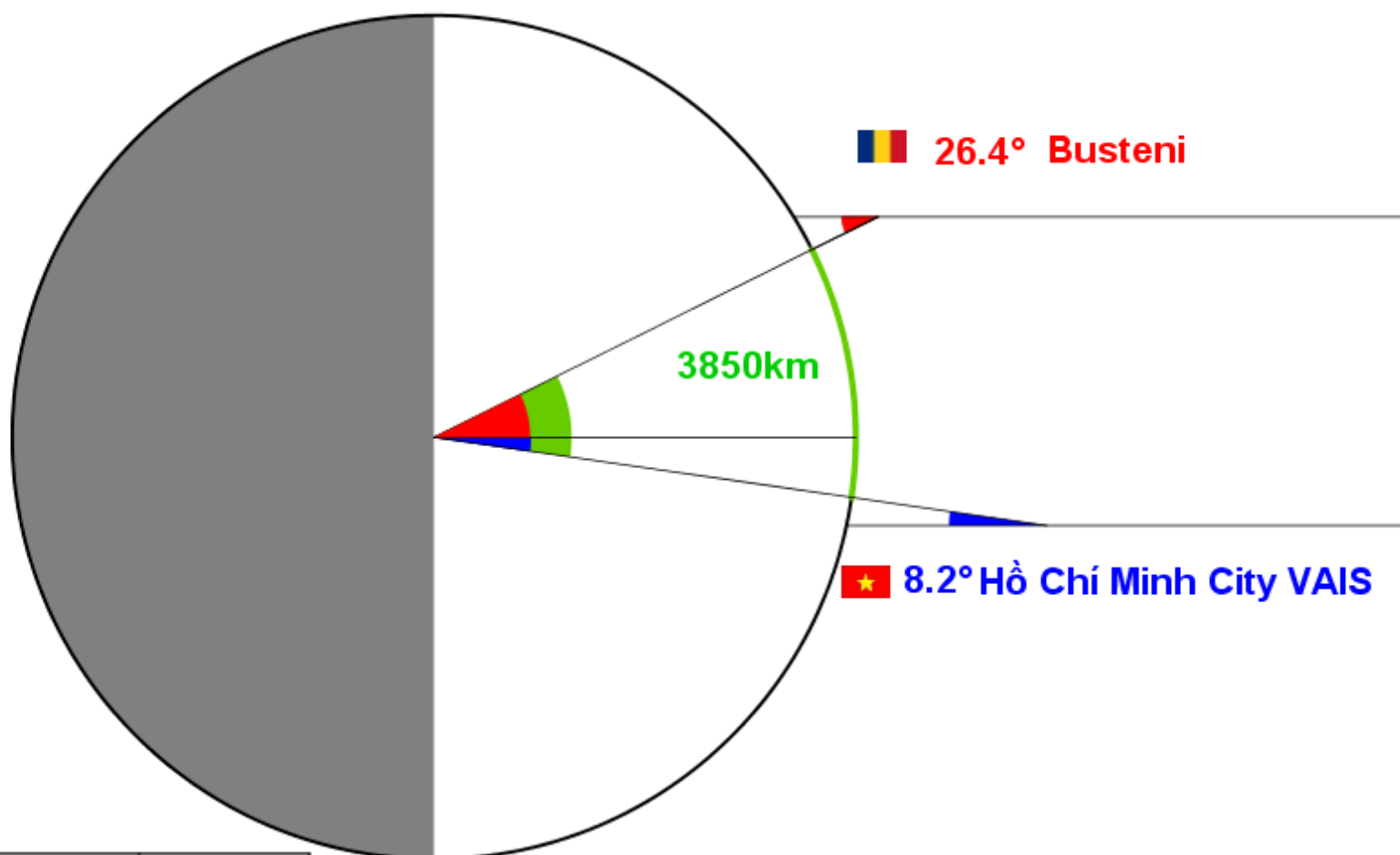


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Hồ Chí Minh City VAIS	Vietnam	Vietnam Australia international school	10.766	106.663

Date	Gnomon	Shadow	Angle
15 May 2019	41.8cm	-6.0cm	-8.2°

15/05/2019 (Busteni-Romania) Latitude: 45.416°

15/05/2019 (Hồ Chí Minh City VAIS-Việt Nam) Latitude: 10.766°



Distance	Angle
circumference	360°
3850km	26.4° + 8.2°

$$\text{circumference} = \frac{360^\circ \times 3850\text{km}}{26.4^\circ + 8.2^\circ} = 40058 \text{ km}$$



Hyderabad, India

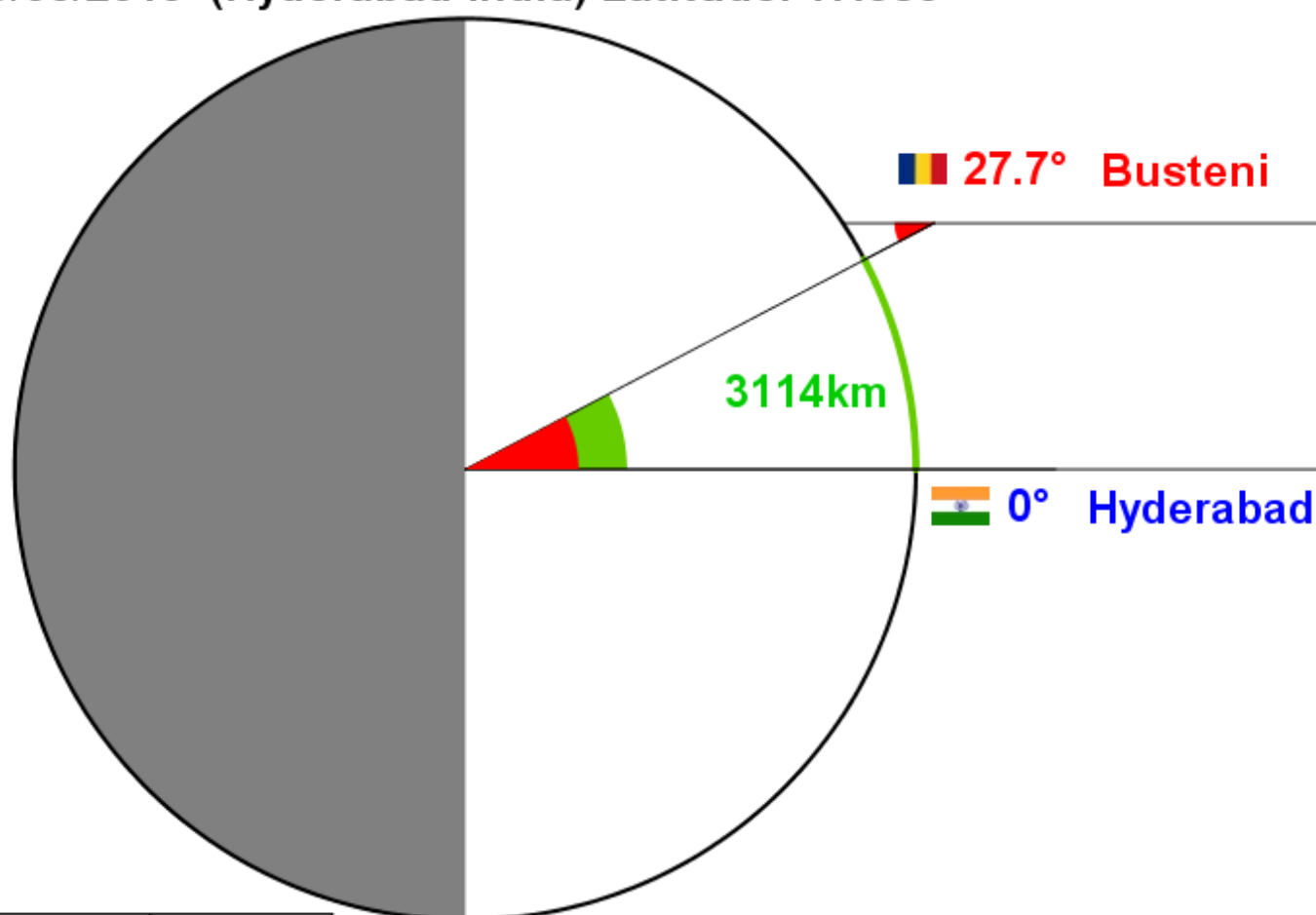


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Hyderabad	India	Space Adhyaan	17.385	78.487

Date	Gnomon	Shadow	Angle
09 May 2019	10.0cm	0.0cm	0.0°

09/05/2019 (Busteni-Romania) Latitude: 45.416°

09/05/2019 (Hyderabad-India) Latitude: 17.385°



Distance	Angle
circumference	360°
3114km	27.7°+0°

$$\text{circumference} = \frac{360^\circ \times 3114\text{km}}{27.7^\circ + 0^\circ} = 40471 \text{ km}$$



Itatiaia, Brazil

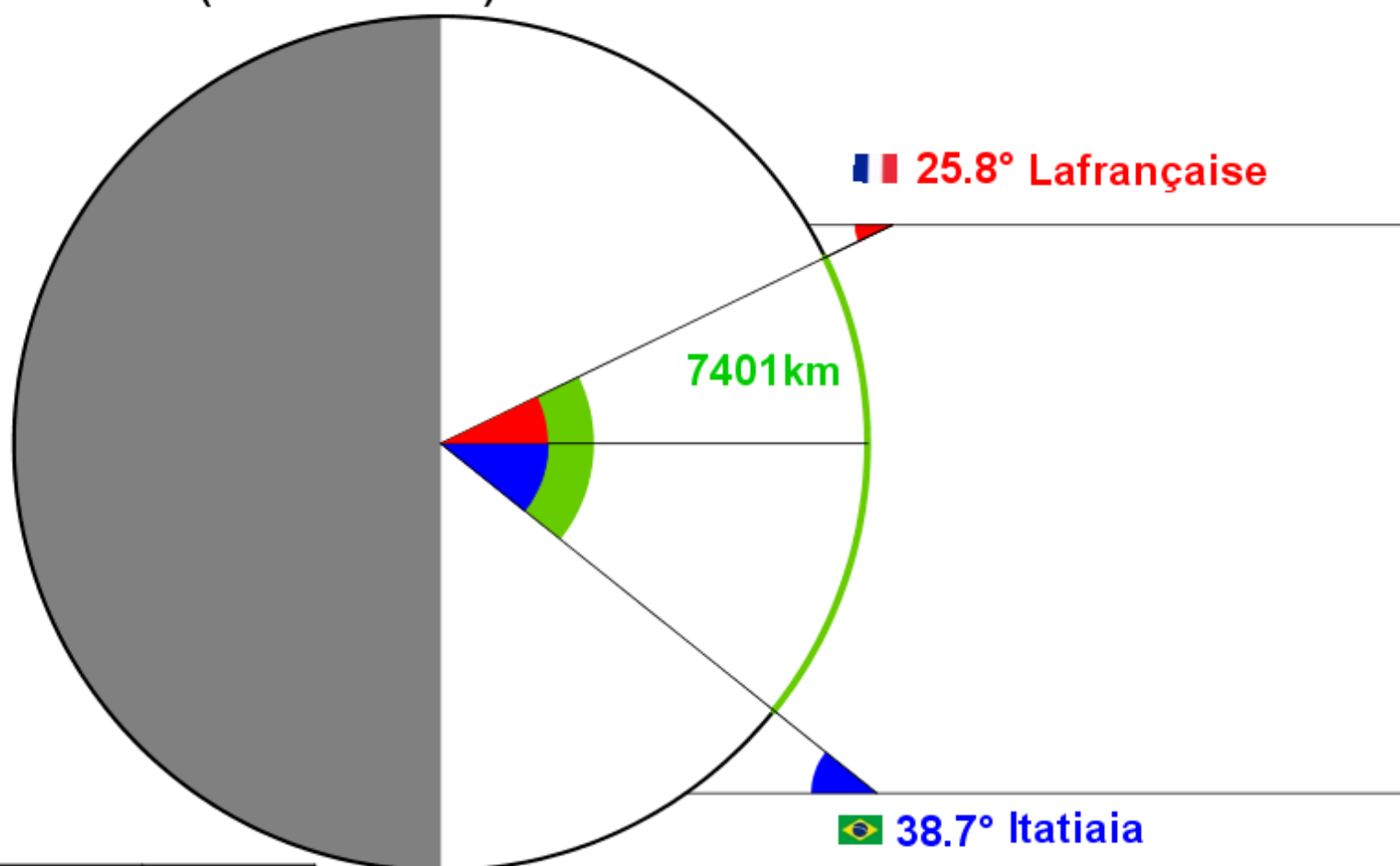


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Itatiaia	Brazil	Centro Educacional Nosso Mundo	-22.491	-44.559

Date	Gnomon	Shadow	Angle
13 May 2019	500.0cm	-400.0cm	-38.7°

13/05/2019 (Lafrançaise-France) Latitude: 44.127°

13/05/2019 (Itatiaia-Brazil) Latitude: -22.491°



Distance	Angle
circumference	360°
7401km	25.8° + 38.7°

$$\text{circumference} = \frac{360^\circ \times 7401\text{km}}{25.8^\circ + 38.7^\circ} = 41308 \text{ km}$$



Köln, Germany

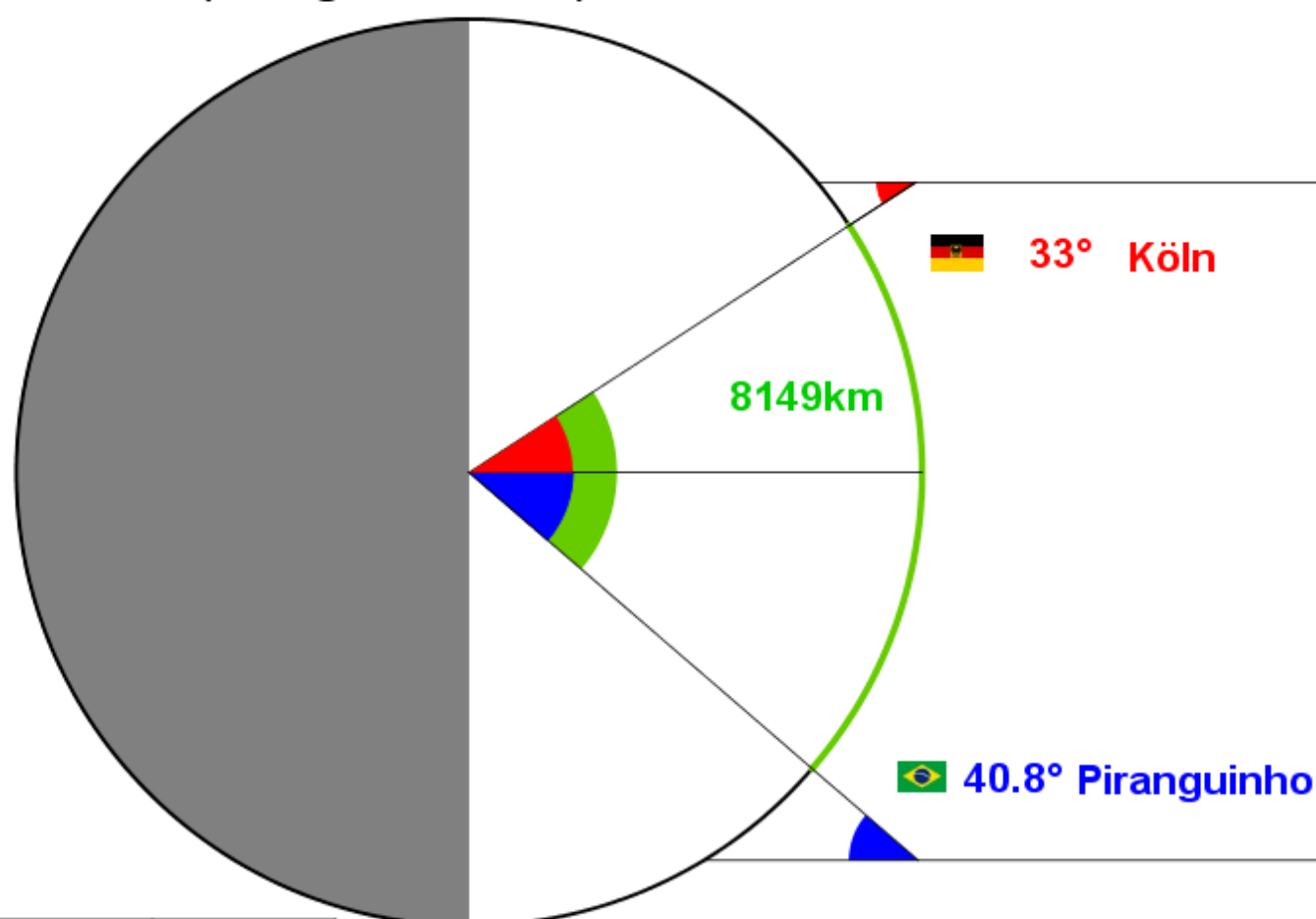


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Köln	Germany	Experimental school Agion Anargyron	50.941	6.958

Date	Gnomon	Shadow	Angle
14 May 2019	30.0cm	19.5cm	33.0°

14/05/2019 (Köln-Germany) Latitude: 50.941°

14/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



circumference = $\frac{360^\circ \times 8149\text{km}}{33^\circ + 40.8^\circ} = 39751 \text{ km}$

Distance	Angle
circumference	360°
8149km	33° + 40.8°



Lafrançaise, France

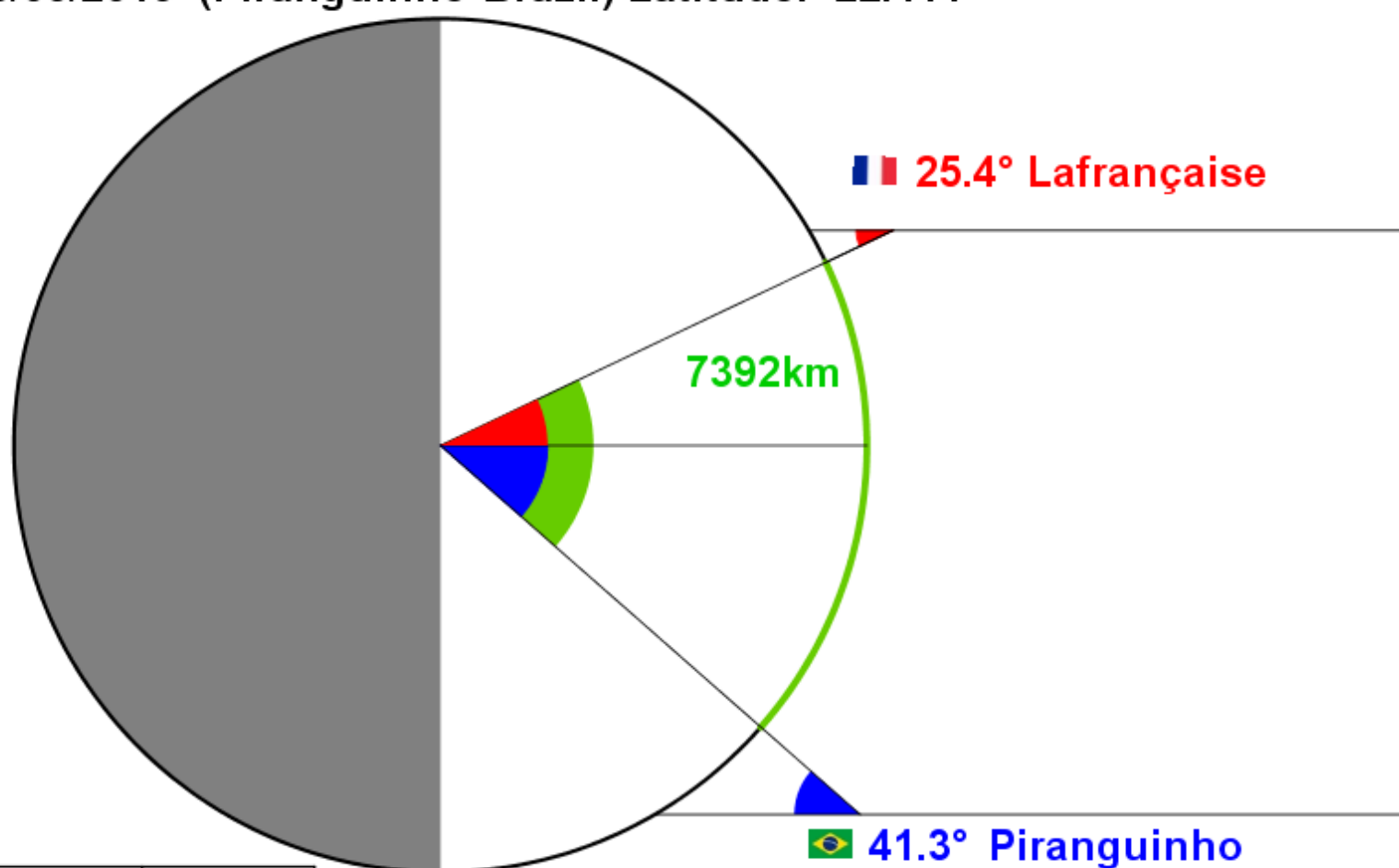


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Lafrançaise	France	Collège Antonin Perbosc	44.127	1.237

Date	Gnomon	Shadow	Angle
06 May 2019	100.0cm	52.5cm	27.7°
10 May 2019	100cm	50.3cm	26.7°
13 May 2019	100.0cm	48.4cm	25.8°
16 May 2019	100.0cm	47.5cm	25.4°
20 May 2019	100.0cm	45.3cm	24.4°
23 May 2019	100cm	44.1cm	23.8°
24 May 2019	100.0cm	43.0cm	23.3°

16/05/2019 (Lafrançaise-France) Latitude: 44.127°

16/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



Distance	Angle
circumference	360°
7392km	25.4° + 41.3°

$$\text{circumference} = \frac{360^\circ \times 7392\text{km}}{25.4^\circ + 41.3^\circ} = 39897 \text{ km}$$



Mărgineni, Romania

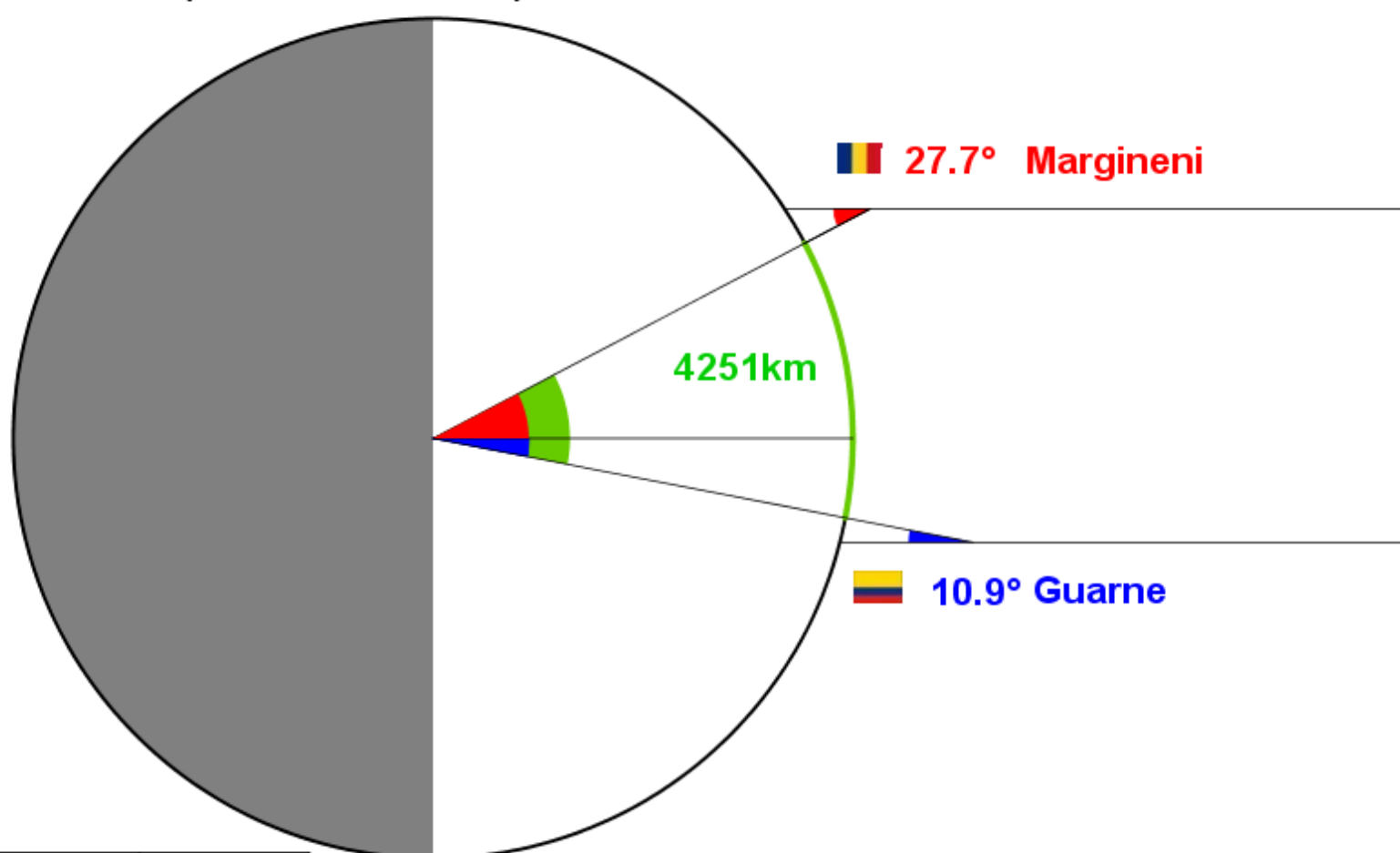


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Mărgineni	Romania	Gh. Popescu School	44.533	24.554

Date	Gnomon	Shadow	Angle
09 May 2019	100cm	52.5cm	27.7°

09/05/2019 (Margineni-Romania) Latitude: 44.533°

09/05/2019 (Guarne-Colombia) Latitude: 6.274°



circumference = $\frac{360^\circ \times 4251\text{km}}{27.7^\circ + 10.9^\circ} = 39647 \text{ km}$

Distance	Angle
circumference	360°
4251km	27.7° + 10.9°



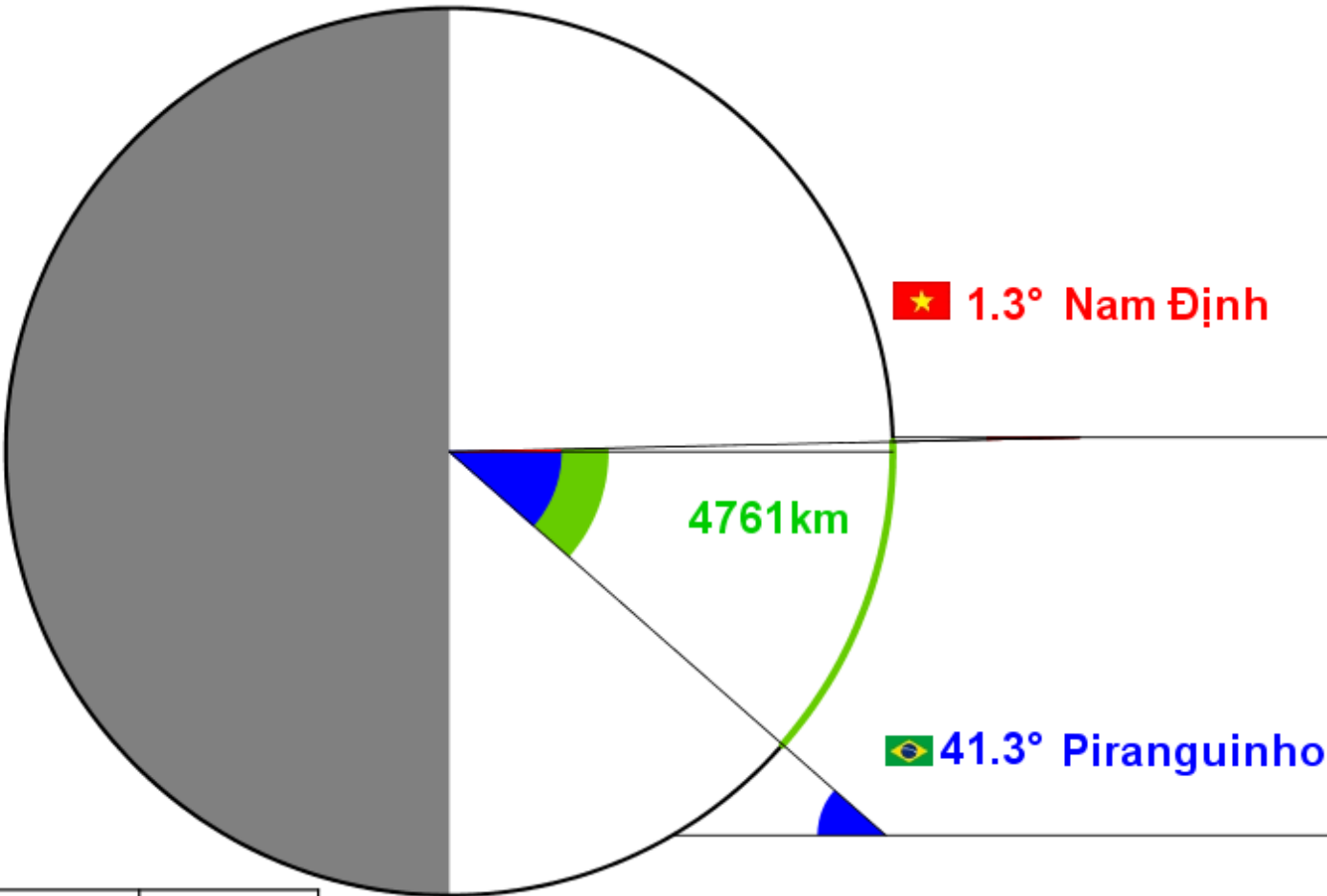
Nam Định, Việt Nam



Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Nam Định	Việt Nam	Mỹ Lộc High School	20.444	106.129

Date	Gnomon	Shadow	Angle
11 May 2019	63.0cm	7.3cm	6.6°
16 May 2019	57.0cm	1.3cm	1.3°
17 May 2019	58.9cm	1.2cm	1.2°

16/05/2019 (Nam Định-Việt Nam) Latitude: 20.444°
16/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



Distance	Angle
circumference	360°
4761km	1.3° + 41.3°

circumference = $\frac{360^\circ \times 4761\text{km}}{1.3^\circ + 41.3^\circ} = 40234 \text{ km}$



Petroupoli, Greece

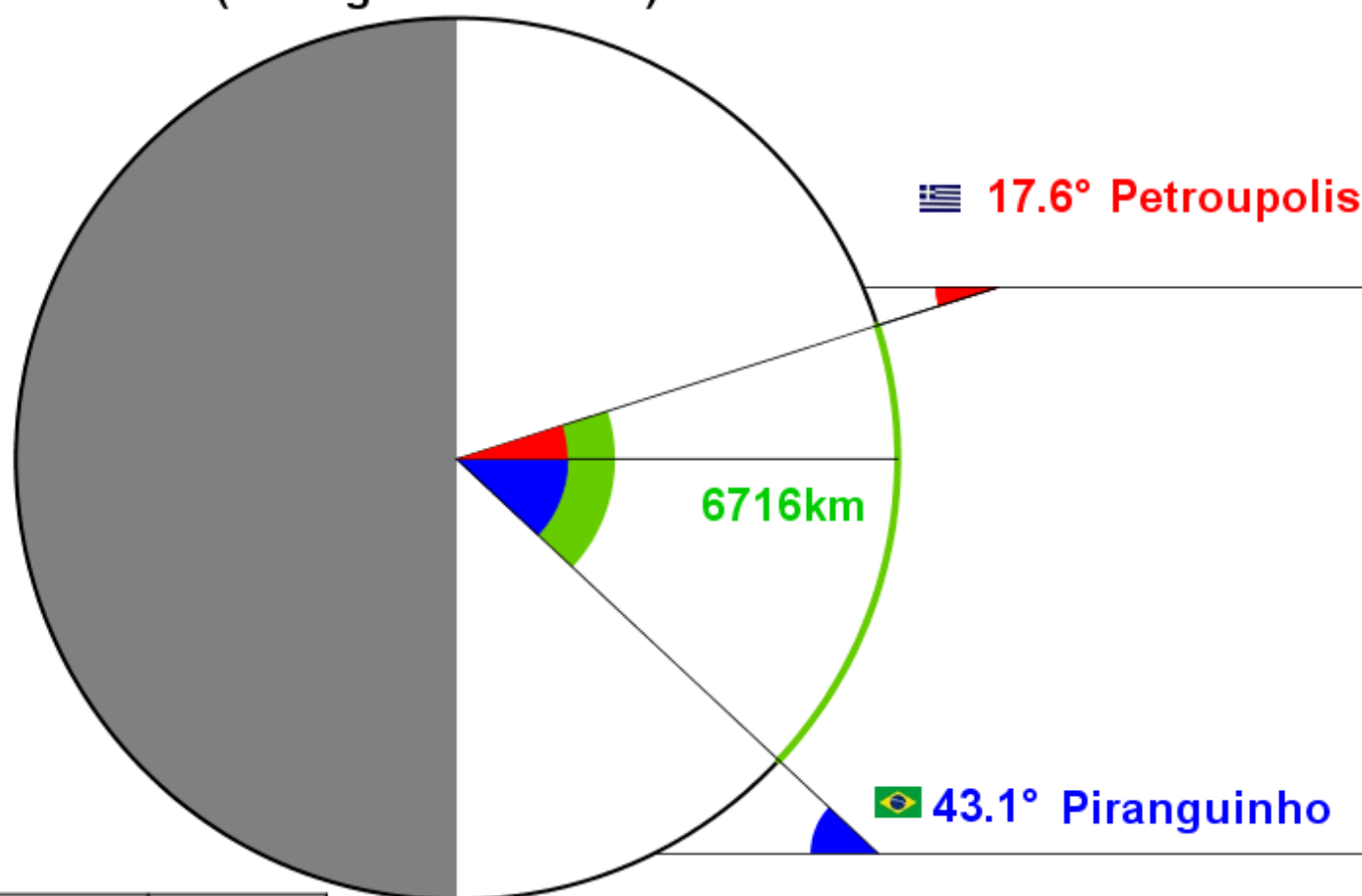


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Petroupoli	Greece	4o Junior High School	38.036	23.674

Date	Gnomon	Shadow	Angle
22 May 2019	60.0cm	19.1cm	17.7°
23 May 2019	60cm	19cm	17.6°

23/05/2019 (Petroupolis-Greece) Latitude: 38.036°

23/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



Distance	Angle
circumference	360°
6716km	17.6° + 43.1°

$$\text{circumference} = \frac{360^\circ \times 6716\text{km}}{17.6^\circ + 43.1^\circ} = 39831 \text{ km}$$



Piranguinho, Brazil

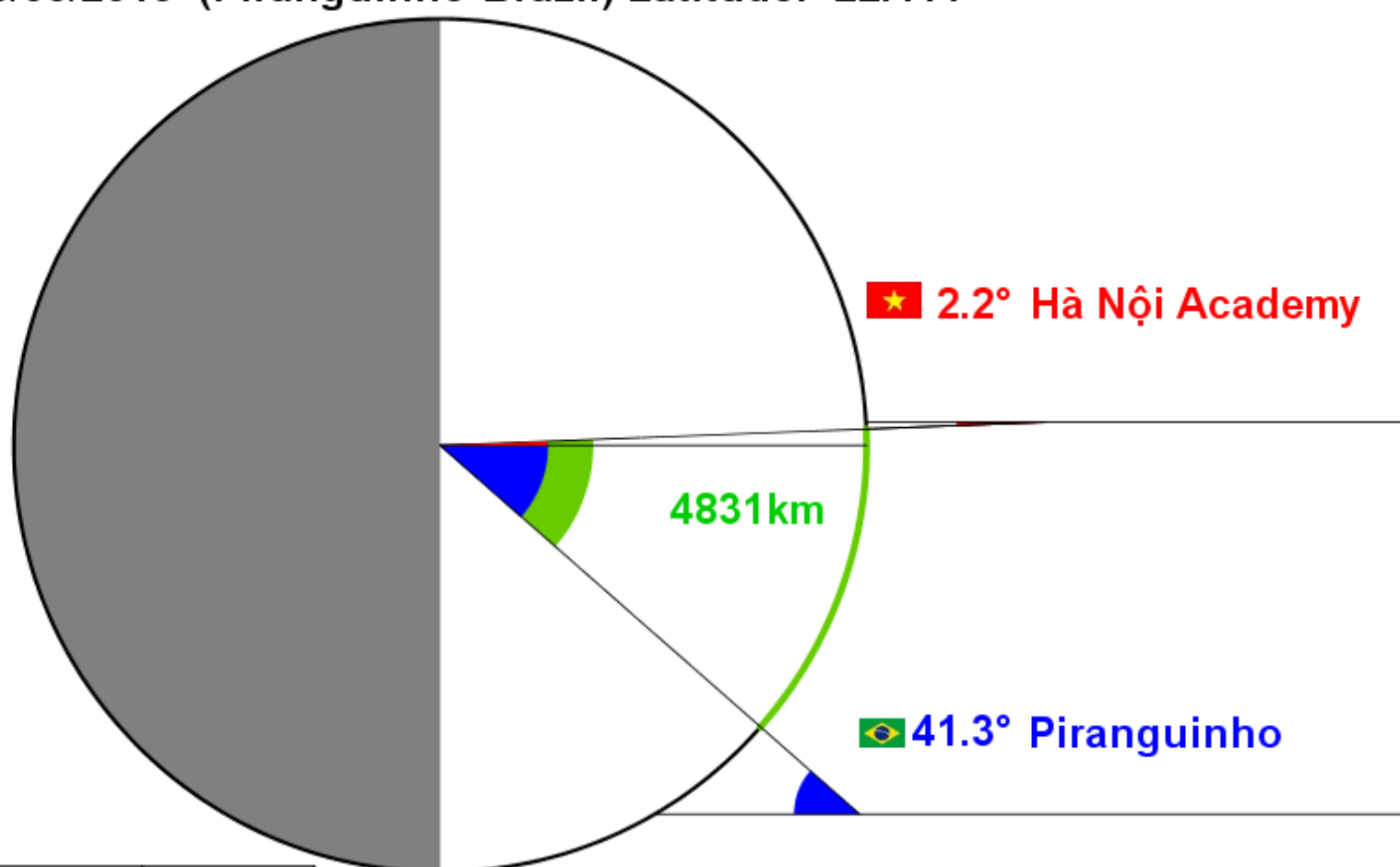


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Piranguinho	Brazil	Universidade Federal de Itajubá	-22.411	-45.535

Date	Gnomon	Shadow	Angle
14 May 2019	70.0cm	-60.4cm	-40.8°
15 May 2019	70.0cm	-61.0cm	-41.1°
16 May 2019	70.0cm	-61.5cm	-41.3°
20 May 2019	70.0cm	-64.1cm	-42.5°
23 May 2019	70cm	-65.6cm	-38.7°
28 May 2019	70.0cm	-67.4cm	-43.9°

16/05/2019 (Hà Nội Academy-Việt Nam) Latitude: 21.073°

16/05/2019 (Piranguinho-Brazil) Latitude: -22.411°



Distance	Angle
circumference	360°
4831km	2.2° + 41.3°

$$\text{circumference} = \frac{360^\circ \times 4831\text{km}}{2.2^\circ + 41.3^\circ} = 39981 \text{ km}$$

A photograph of a whiteboard with a silver metal frame, positioned on a green and brown patterned surface. A yellow measuring tape is stretched horizontally across the board. A wooden block is placed on the left side, and a metal rod is positioned vertically on the right side. The date "14.05.2019" is printed in orange at the bottom left.

14.05.2019

A photograph of a whiteboard with a silver metal frame, positioned on a green and brown patterned surface. A yellow measuring tape is stretched horizontally across the board. A wooden block is placed on the left side, and a metal rod is positioned vertically on the right side. The date "28.05.2019" is printed in orange at the bottom left.

28.05.2019

Rio de Janeiro, Brazil

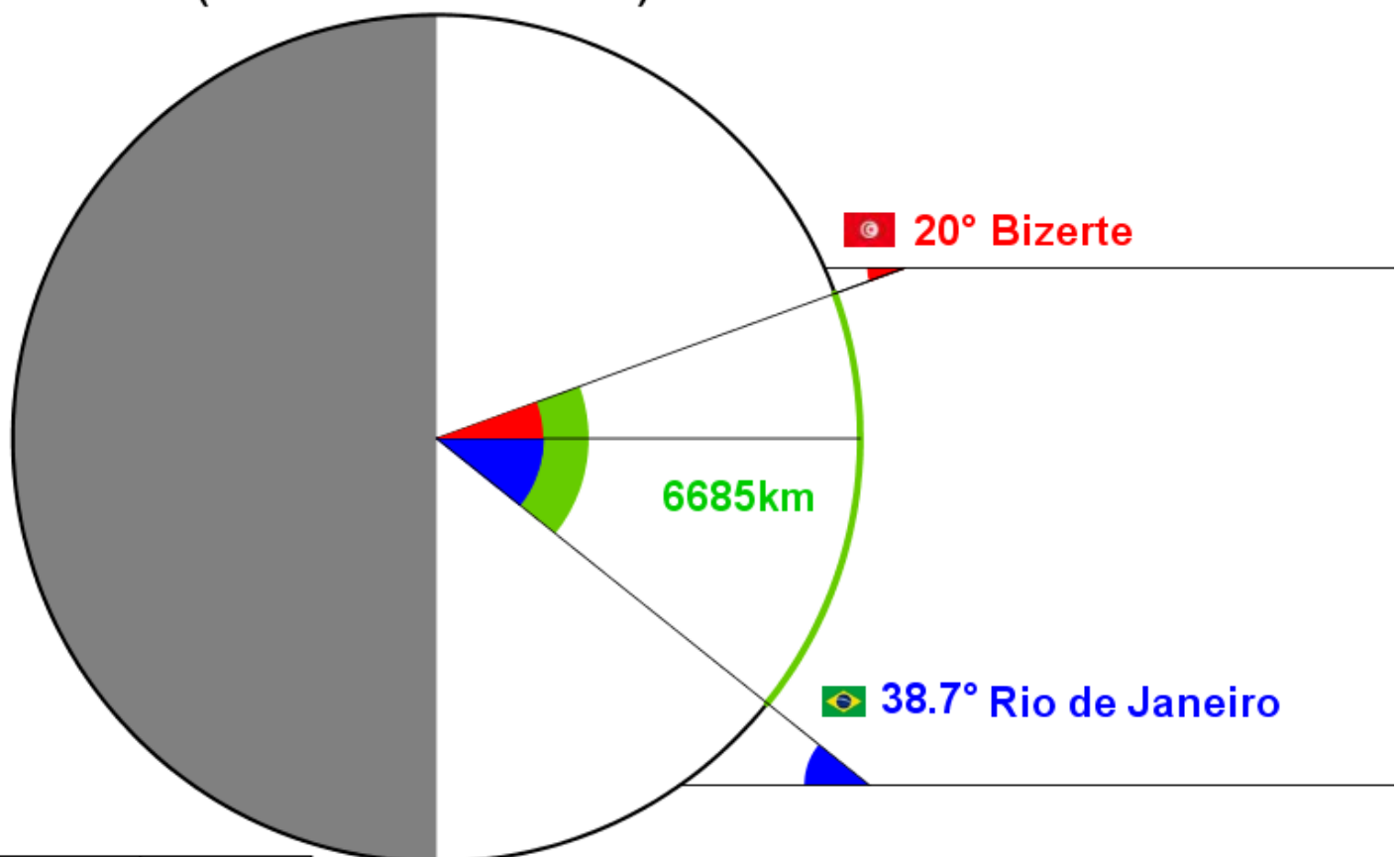


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Rio de Janeiro	Brazil	Centro Educacional Nosso Mundo	-22.890	-43.317

Date	Gnomon	Shadow	Angle
03 May 2019	100cm	-68cm	-34.2°
06 May 2019	100.0cm	-68.0cm	-34.2°
07 May 2019	100cm	-68cm	-34.2°
09 May 2019	100.0cm	-68.0cm	-34.2°
10 May 2019	100cm	-68cm	-34.2°
14 May 2019	100.0cm	-70.0cm	-35.0°
20 May 2019	100cm	-80cm	-38.7°
21 May 2019	100.0cm	-80.0cm	-38.7°
22 May 2019	100cm	-80cm	-38.7°
23 May 2019	100.0cm	-80.0cm	-38.7°
27 May 2019	100cm	-80cm	-38.7°
28 May 2019	100.0cm	-82.0cm	-39.4°
29 May 2019	100cm	-82cm	-39.4°
30 May 2019	100cm	-83cm	-39.7°
31 May 2019	100cm	-83cm	-39.7°

21/05/2019 (Bizerte-Tunisia) Latitude: 37.284°

21/05/2019 (Rio de Janeiro-Brazil) Latitude: -22.89°



Distance	Angle
circumference	360°
6685km	20° + 38.7°

$$\text{circumference} = \frac{360^\circ \times 6685\text{km}}{20^\circ + 38.7^\circ} = 40998 \text{ km}$$



Úbeda, Spain

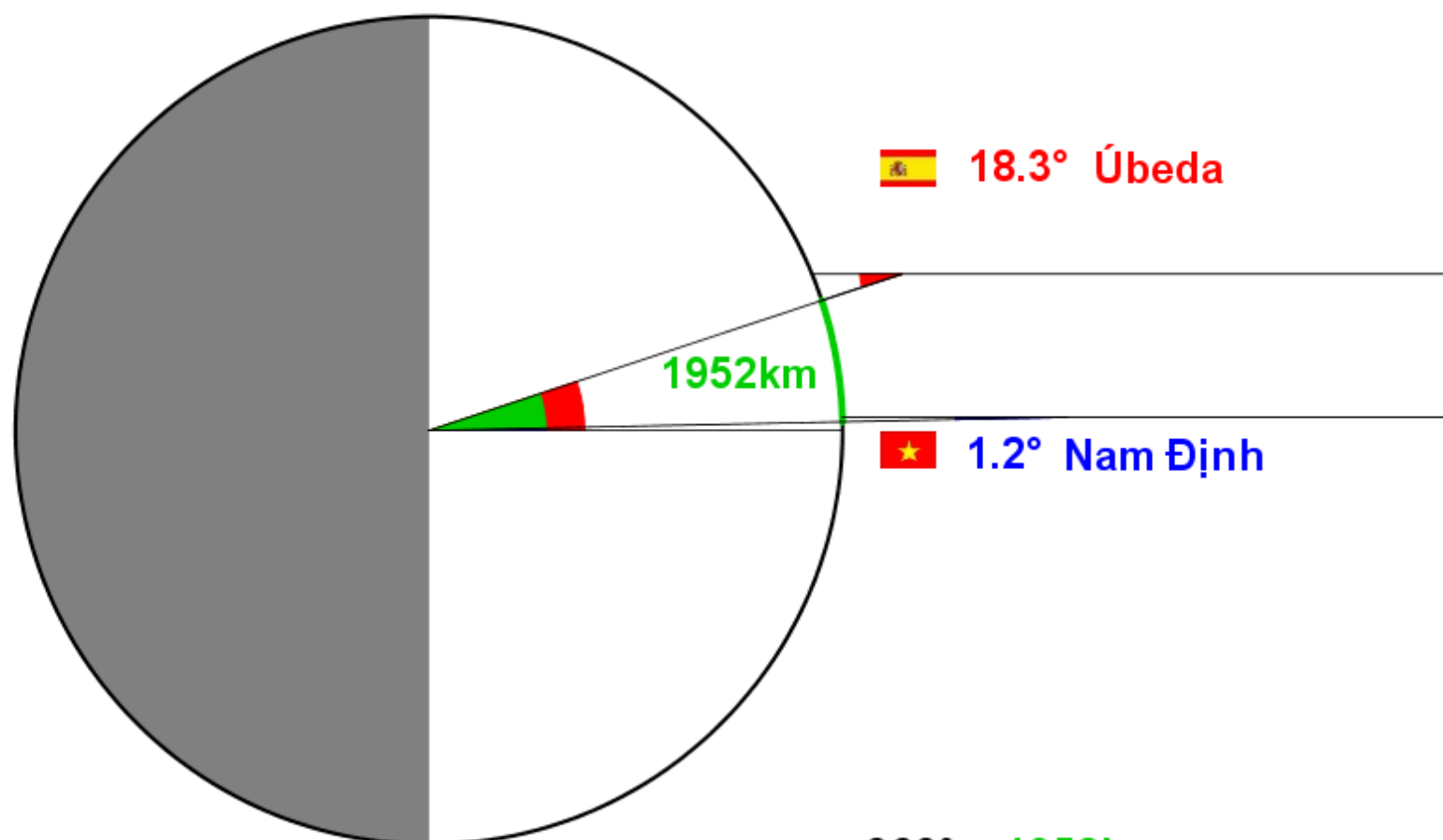


Flag	City	Country	School	Latitude (°) +N/-S	Longitude (°) +E/-W
	Úbeda	Spain	Colegio Salesiano Santo Domingo Savio	38.017	-3.367

Date	Gnomon	Shadow	Angle
10 May 2019	120cm	44.5cm	20.3°
17 May 2019	120.0cm	39.7cm	18.3°
31 May 2019	119.9cm	36.1cm	16.8°

17/05/2019 (Úbeda-Spain) Latitude: 38.017°

17/05/2019 (Nam Định-Việt Nam) Latitude: 20.444°



Distance	Angle
circumference	360°
1952km	18.3° - 1.2°

$$\text{circumference} = \frac{360^\circ \times 1952\text{km}}{18.3^\circ - 1.2^\circ} = 41095 \text{ km}$$

