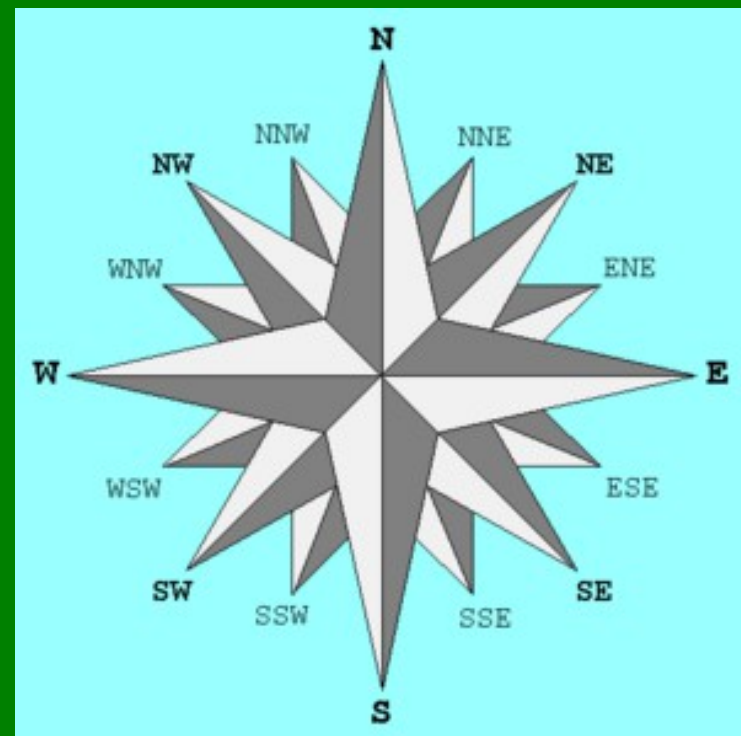


Astronomiczne podstawy geografii

wykład dla I roku
studiów pierwszego
stopnia, 2014/15.



Piotr A. Dybczyński

www.astro.amu.edu.pl

Strona Wydziałowa

Informacje ogólne

Materiały dla studentów, z którymi mam zajęcia.

Dla doktoranta FB (wymaga hasła)

Dla doktoranta ŁG (wymaga hasła)

Co nowego?

Text Size - 0 +

Powered by



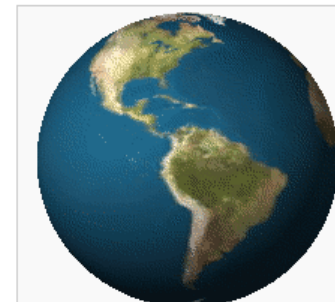
Astronomiczne podstawy geografii - wykład

Tematyka wykładu:

- Sfera niebieska
- Układy współrzędnych i ich związki
- Zjawiska ruchu dobowego
- Zjawiska ruchu rocznego
- Czas
- Zasady wyznaczanie szerokości i długości geograficznej z obserwacji astronomicznych

Terminy wykładów: 7, 14, 21 i 28 października oraz 4 i 18 listopada, godz. 14:00, Sala 3

Informacje o kolokwium zaliczeniowym i poprawkowym, w tym przykłady zadań.



autor: Luis Miguel Bugallo Sánchez
[źródło](#)

Wykłady:

Poniżej udostępniam prezentacje z wykładów na licencji:



-
-
-
-
-

Polecana literatura:

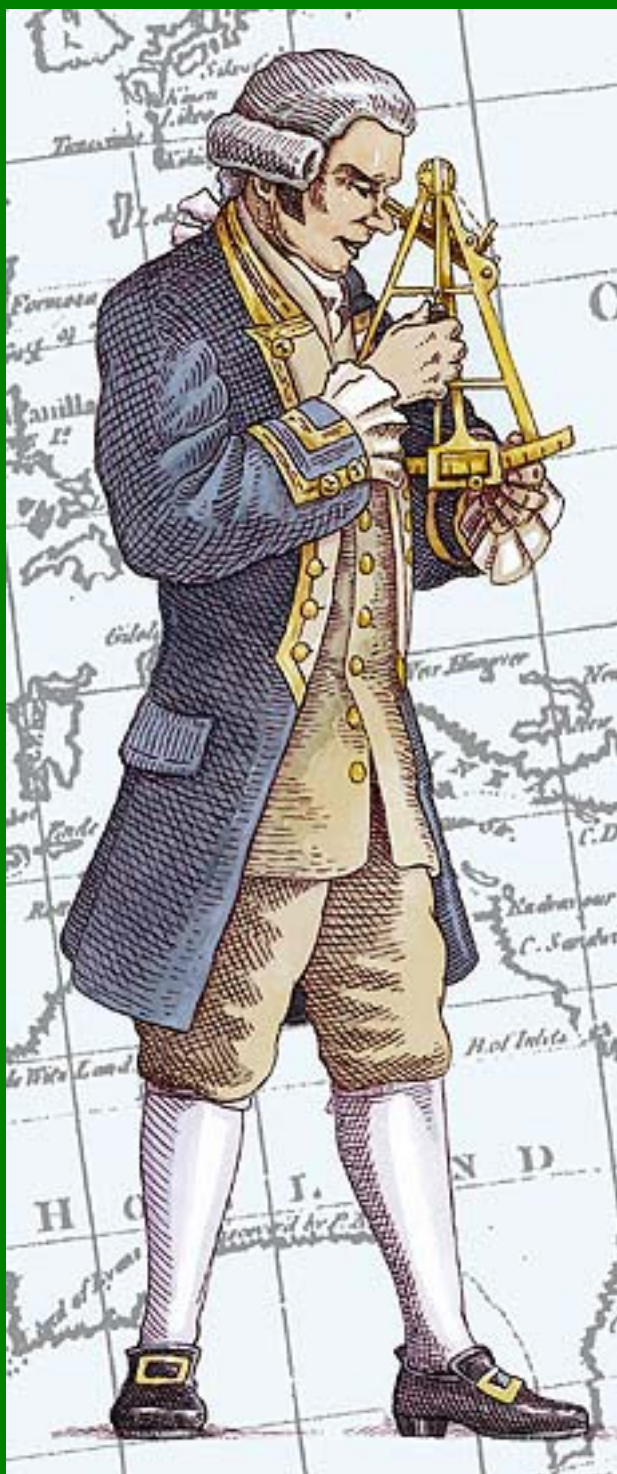
1. Jerzy M. Kreiner, [Ziemia i Wszechświat - astronomia nie tylko dla geografów](#), 2009, Wydawnictwo Naukowe Uniwersytetu Pedagogicznego - Kraków
2. [Doskonały materiał \(plik PDF\)](#), opracowany przez Panią dr Iwonę Wytrzyszczak z naszego obserwatorium.

Inne pozycje:

1. Jan Mietelski, [Astronomia w geografii](#), 2005, Wydawnictwo Naukowe PWN, Warszawa

Dla zainteresowanych:

- [Almagest, by R.Fitzpatrick](#)
- [User's Guide to the Night Sky, by John Lucey](#)



Cel tych zajęć:
zobaczyć
i zrozumieć (!!)
astronomiczne
podstawy
geografii.

Nic nie trzeba uczyć się na pamięć !

Zarówno na kolokwium zaliczeniowym jak i na poprawkowym **będzie można korzystać z dostarczonej przeze mnie ściągki. Można będzie używać kalkulatorów** ale nie telefonów, tabletów, laptopów czy innych elektronicznych urządzeń komunikacyjnych.



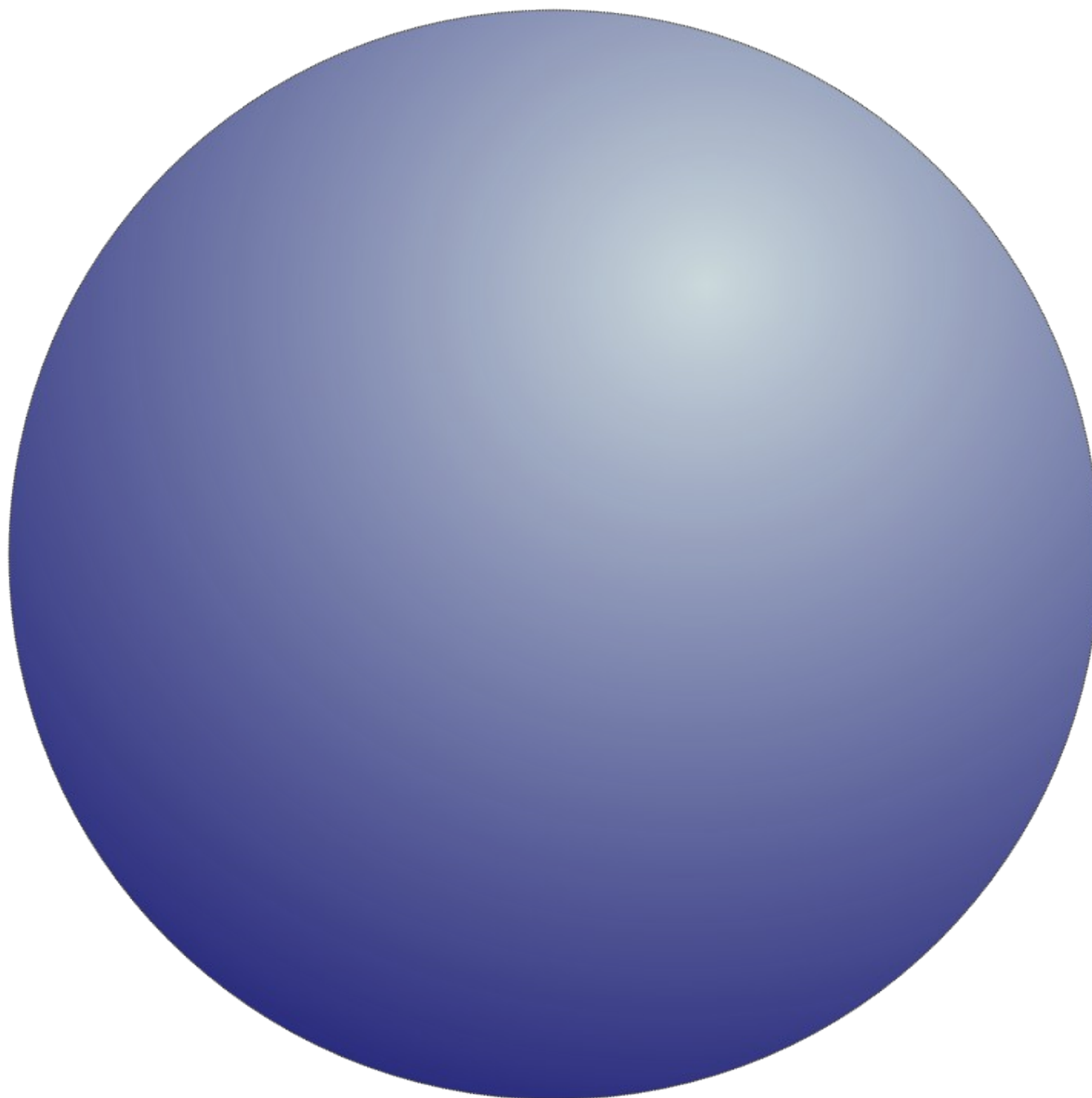
Wykład 1

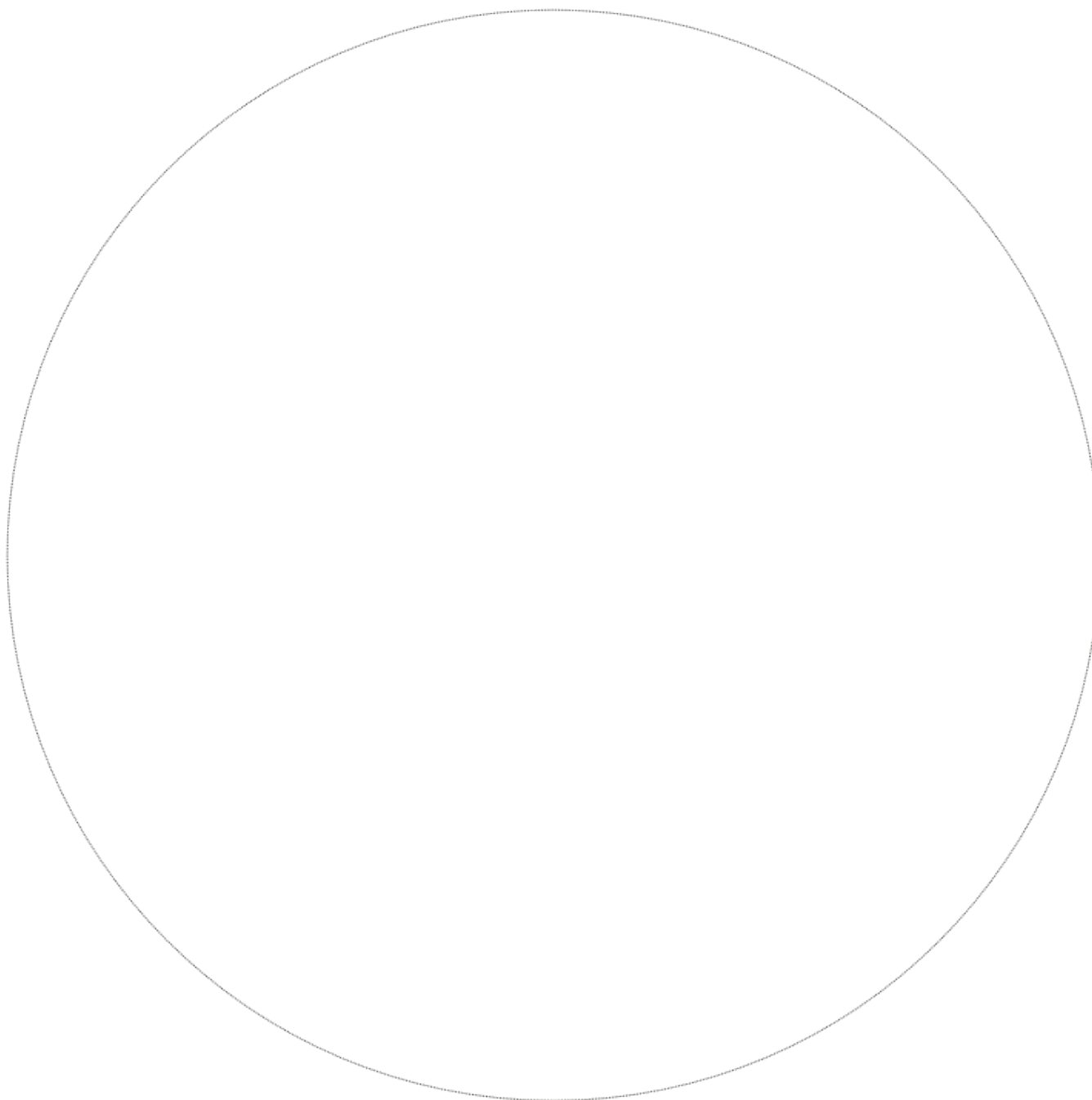
Sfera niebieska, ruch dobowy, górowania i dołowania.

Piotr A. Dybczyński

Ilustracje zawarte w tym wykładzie są w większości mojego autorstwa, w pozostałych przypadkach podane jest źródło. Przy tworzeniu niektórych obrazków wykorzystałem elementy następujących grafik:

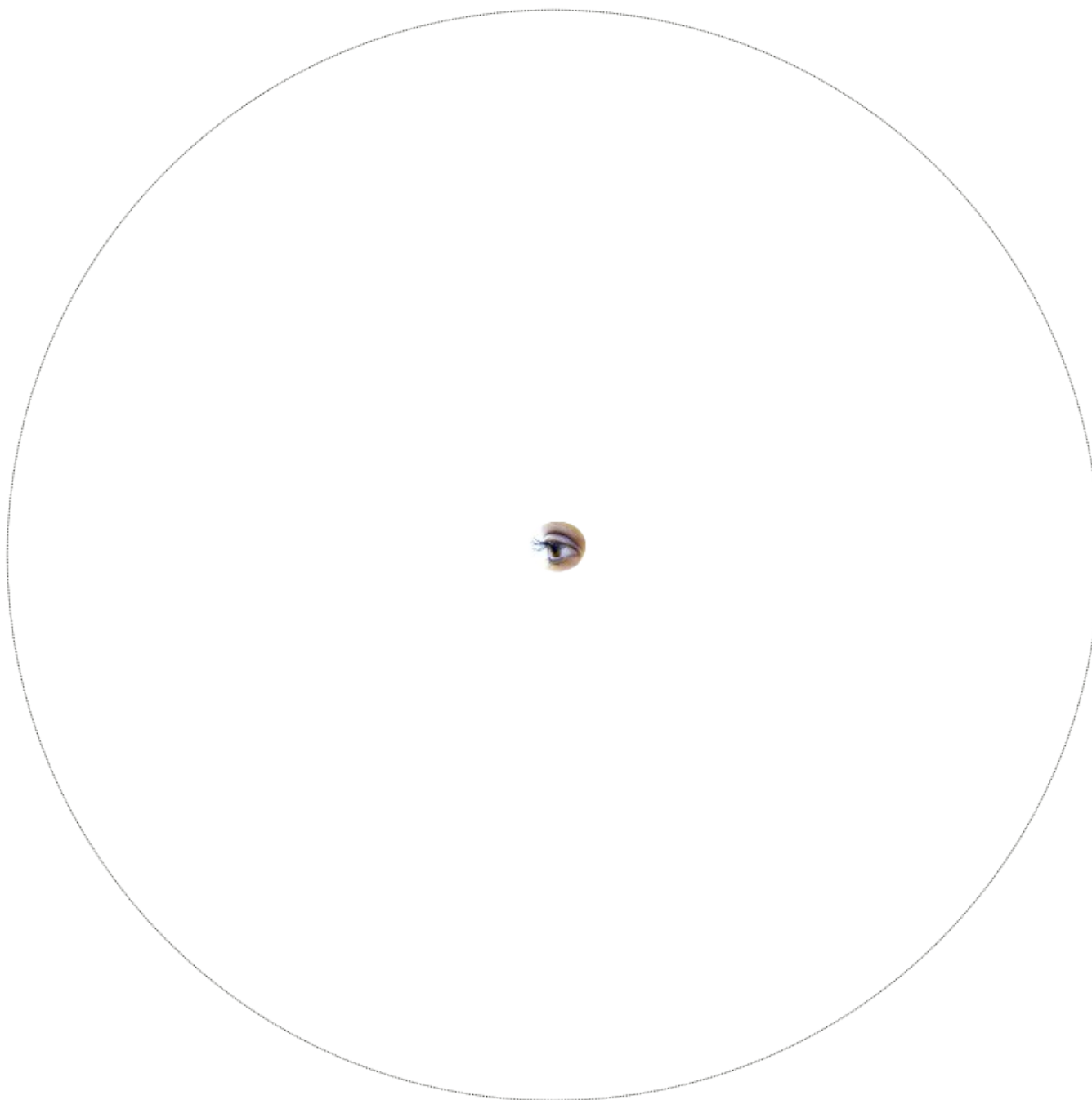
- http://commons.wikimedia.org/wiki/File:Eye_lashes_with_makeup.jpg
- http://en.wikibooks.org/wiki/File:Polaris_Altitude.svg
- http://en.wikibooks.org/wiki/File:Celestial_Sphere.bjb.svg

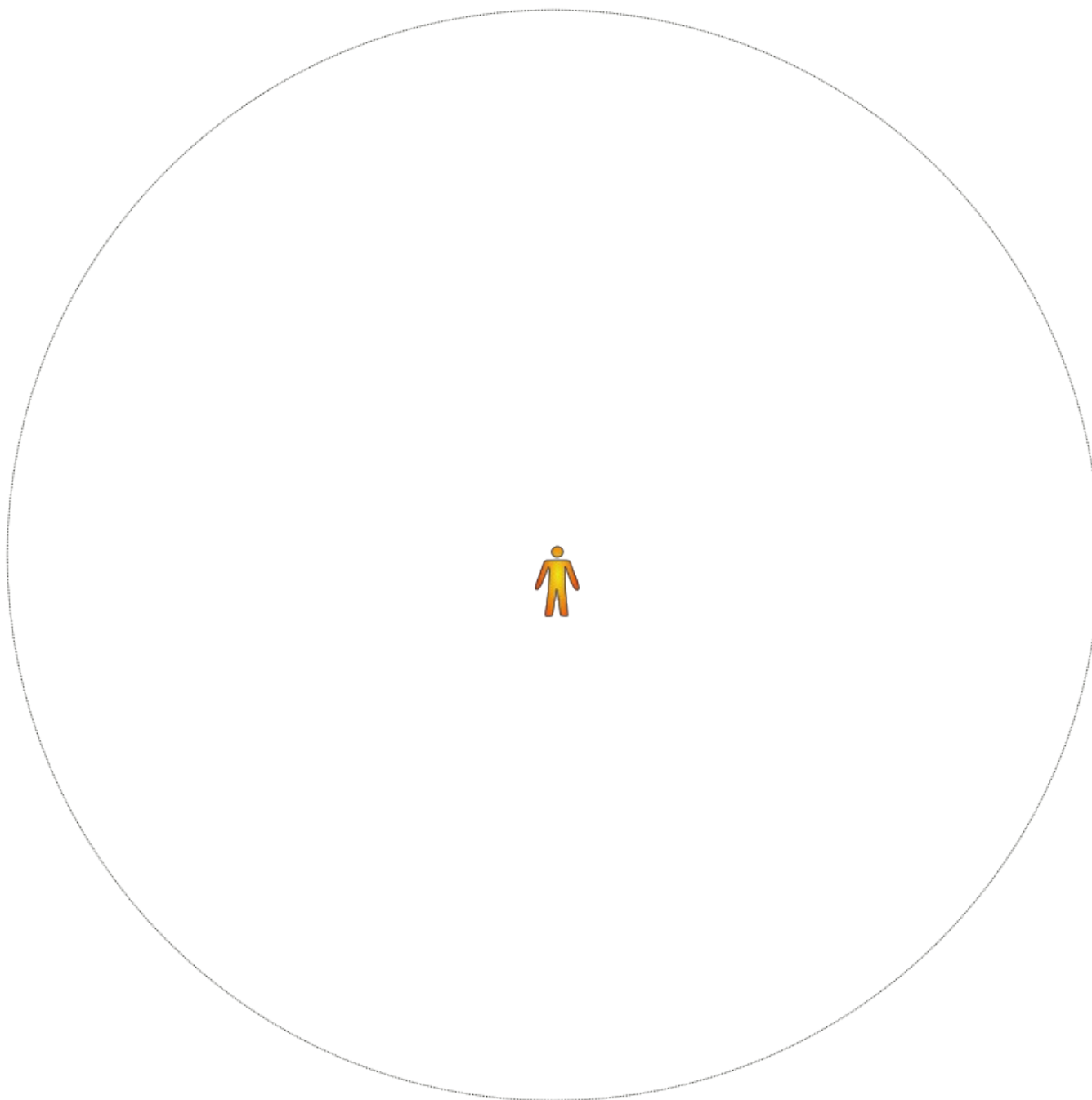


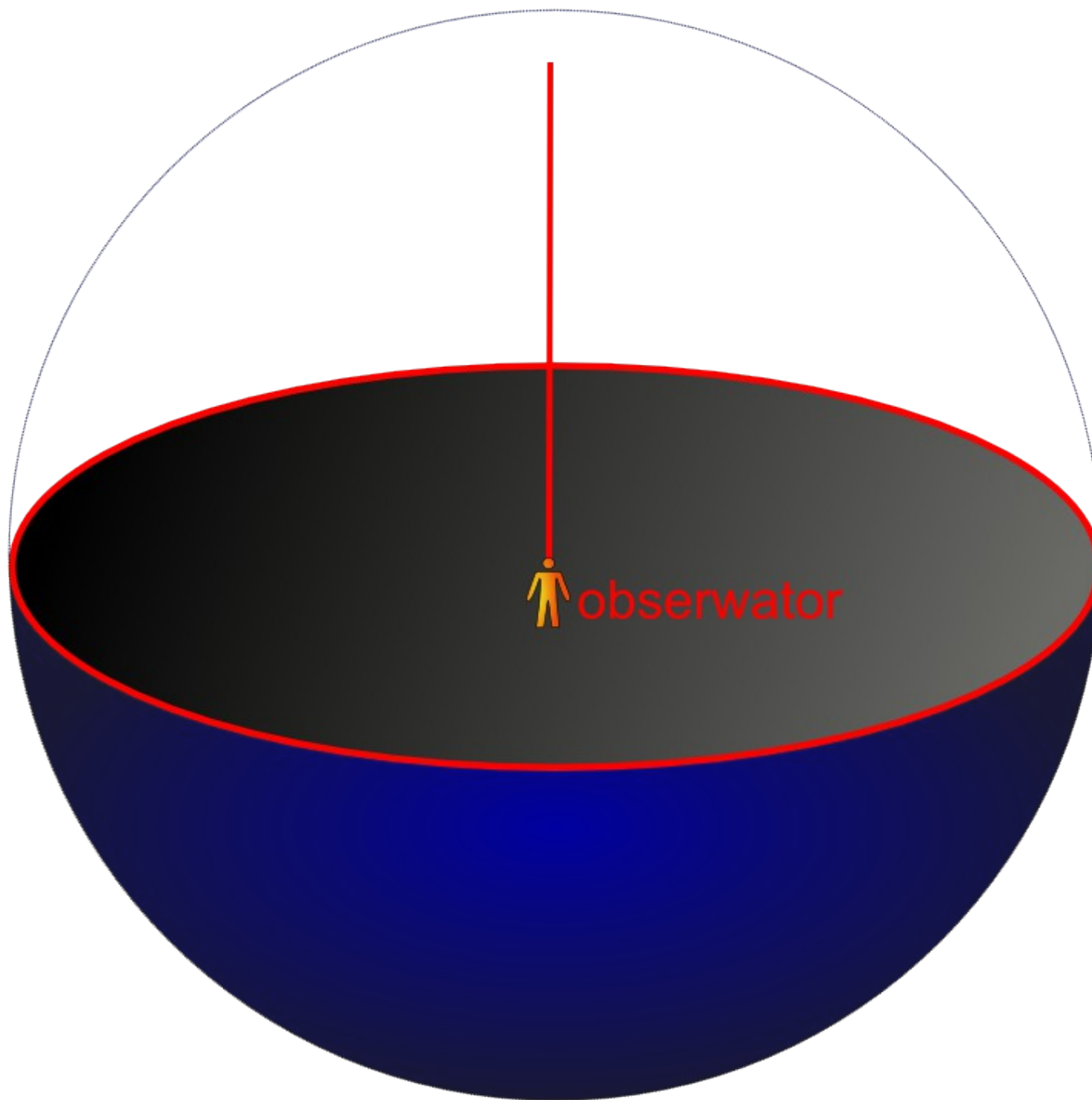








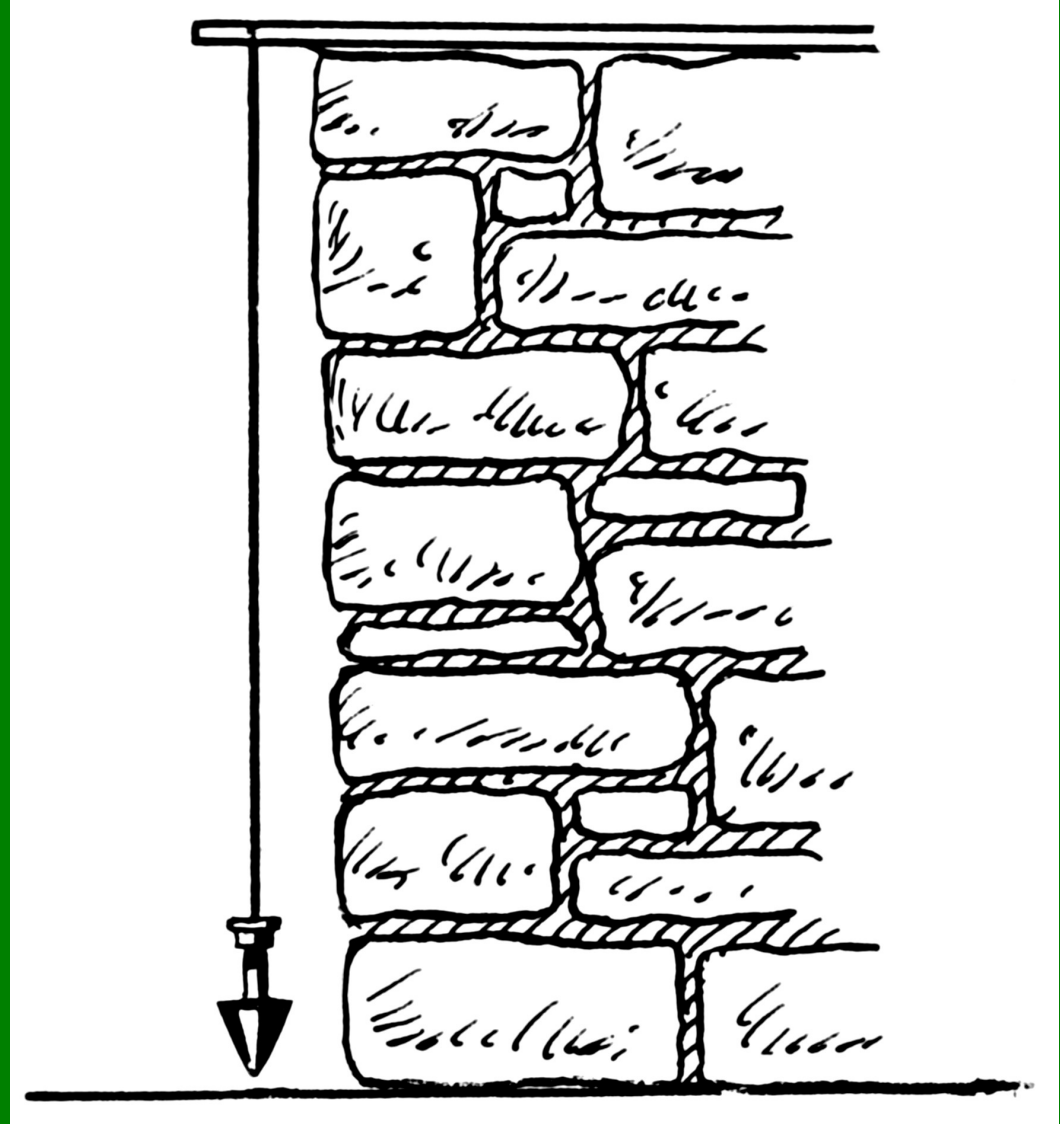




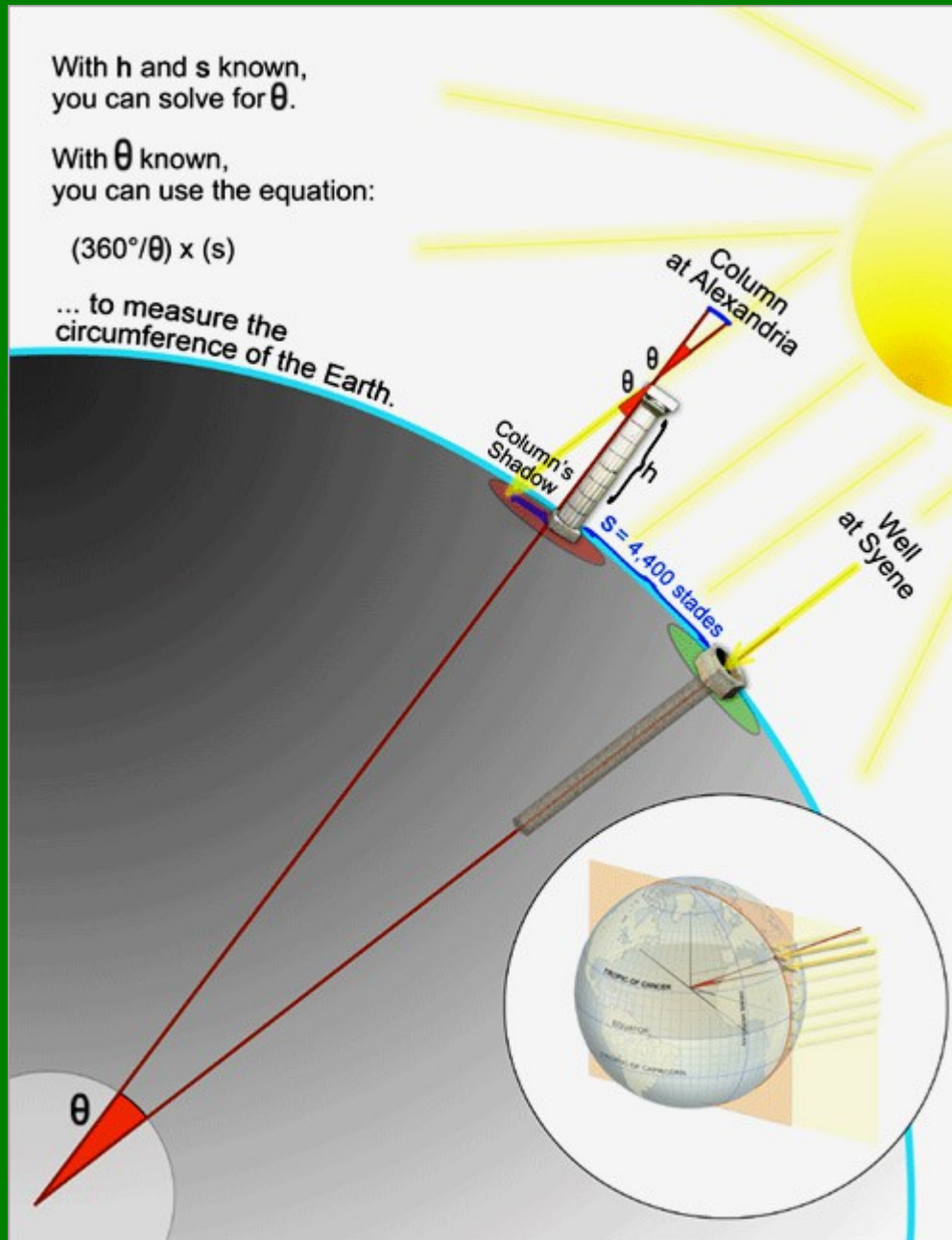
Pion



Fot: Wikimedia by Rob

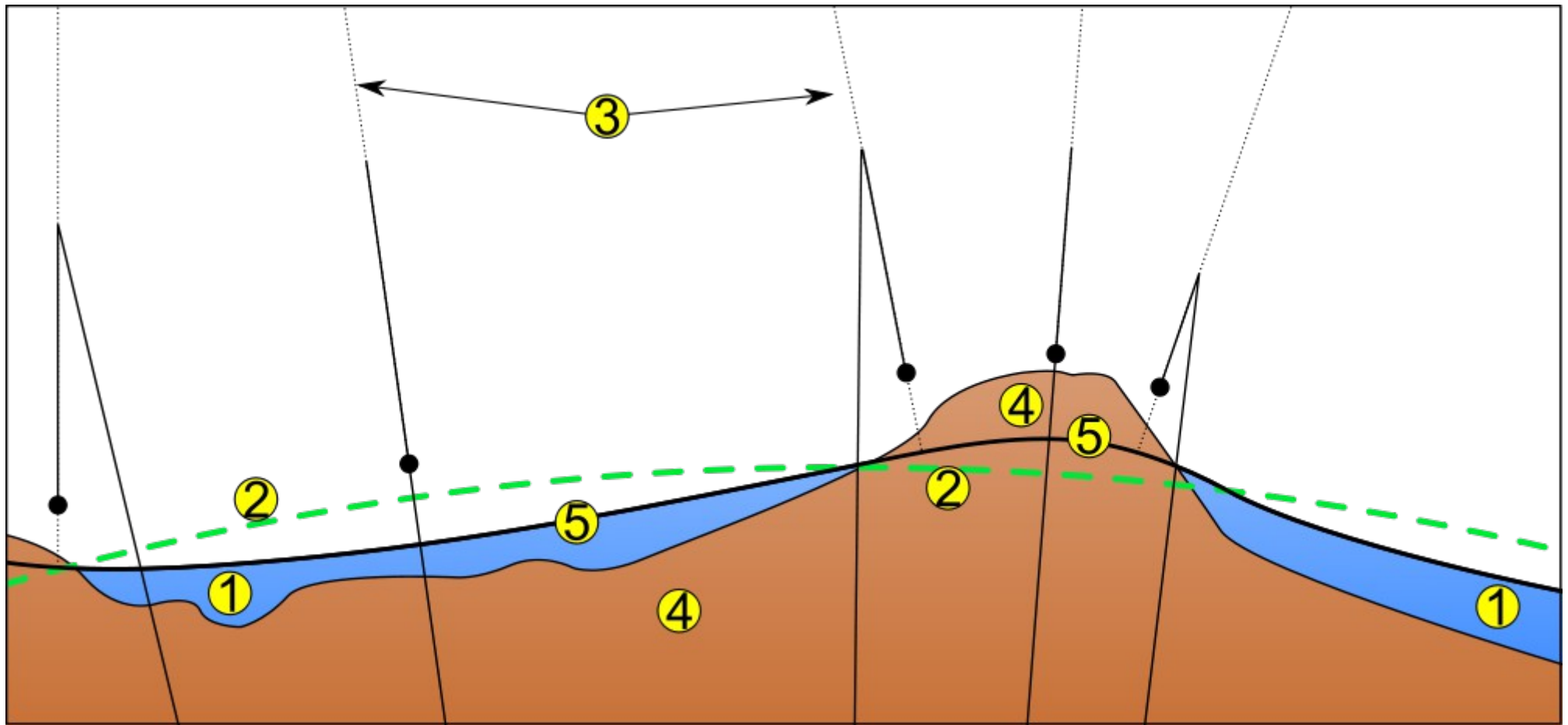


Dygresja 1: pomiar Eratostenesa



- **Praktyczne wykorzystanie kierunku pionu**
- **ok. 230 p.n.e., Eratostenes**
- **Otrzymał obwód Ziemi ok. 40000 km**

Dygresja 2: geoida

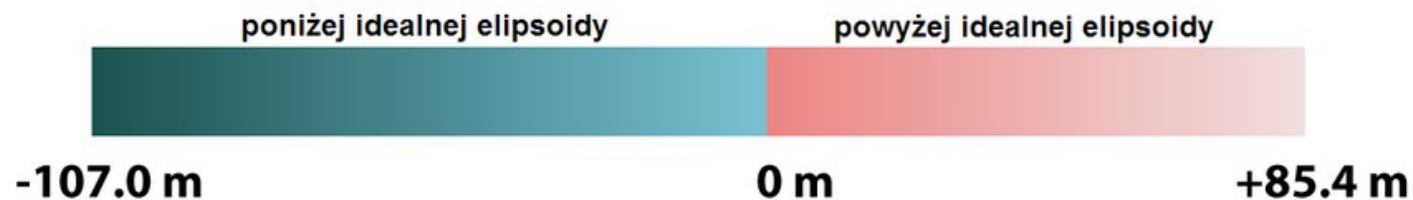
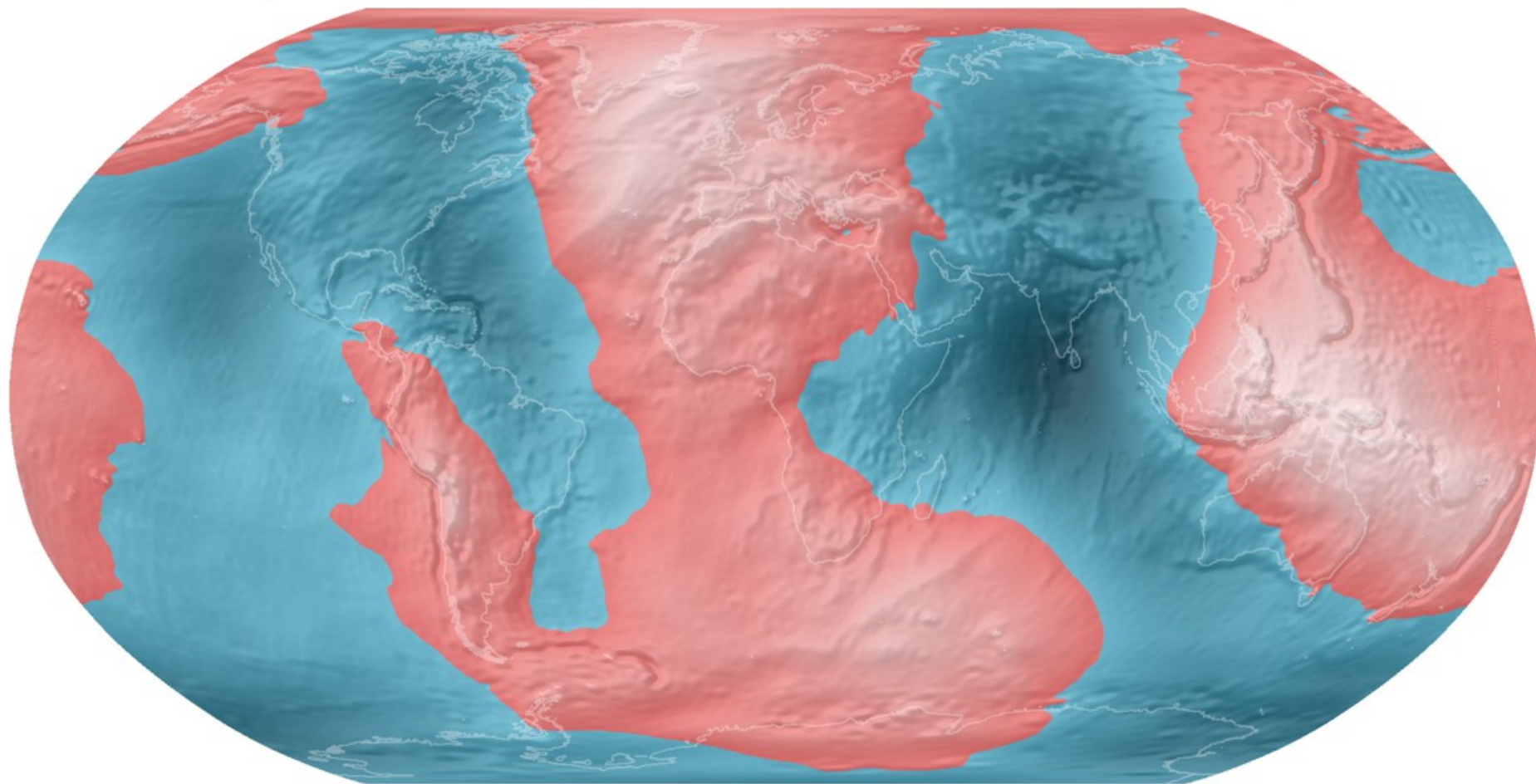


1 – oceany, 2 – elipsoida, 3 – linie lokalnego pionu, 4 – kontynent, 5 - geoida

rys. MesserWoland (Wikimedia)

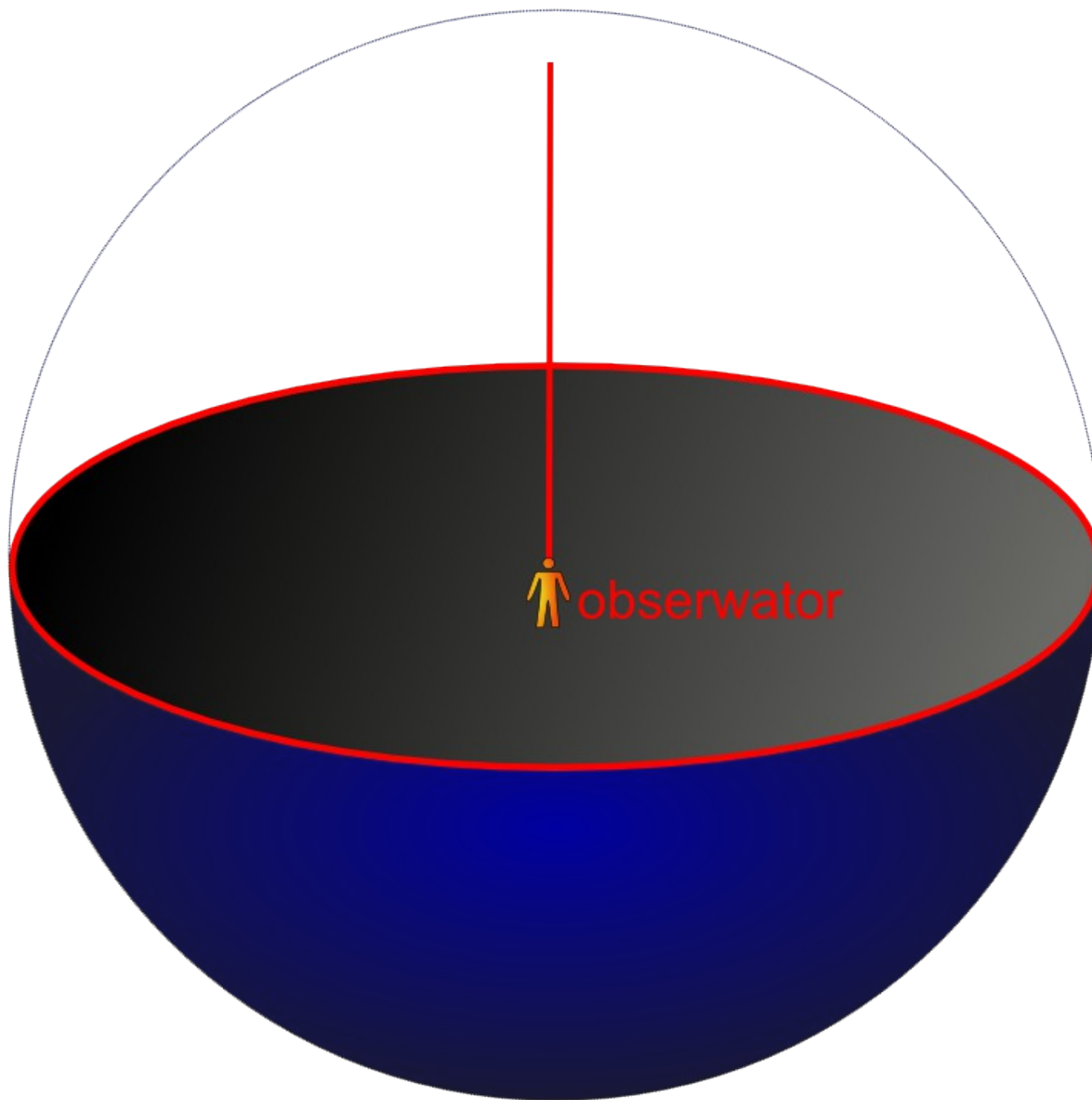
Kształt Ziemi w porównaniu z idealną elipsoidą

(różnica pomiędzy modelem geoidy EGM96 a elipsoidą odniesienia WGS84)

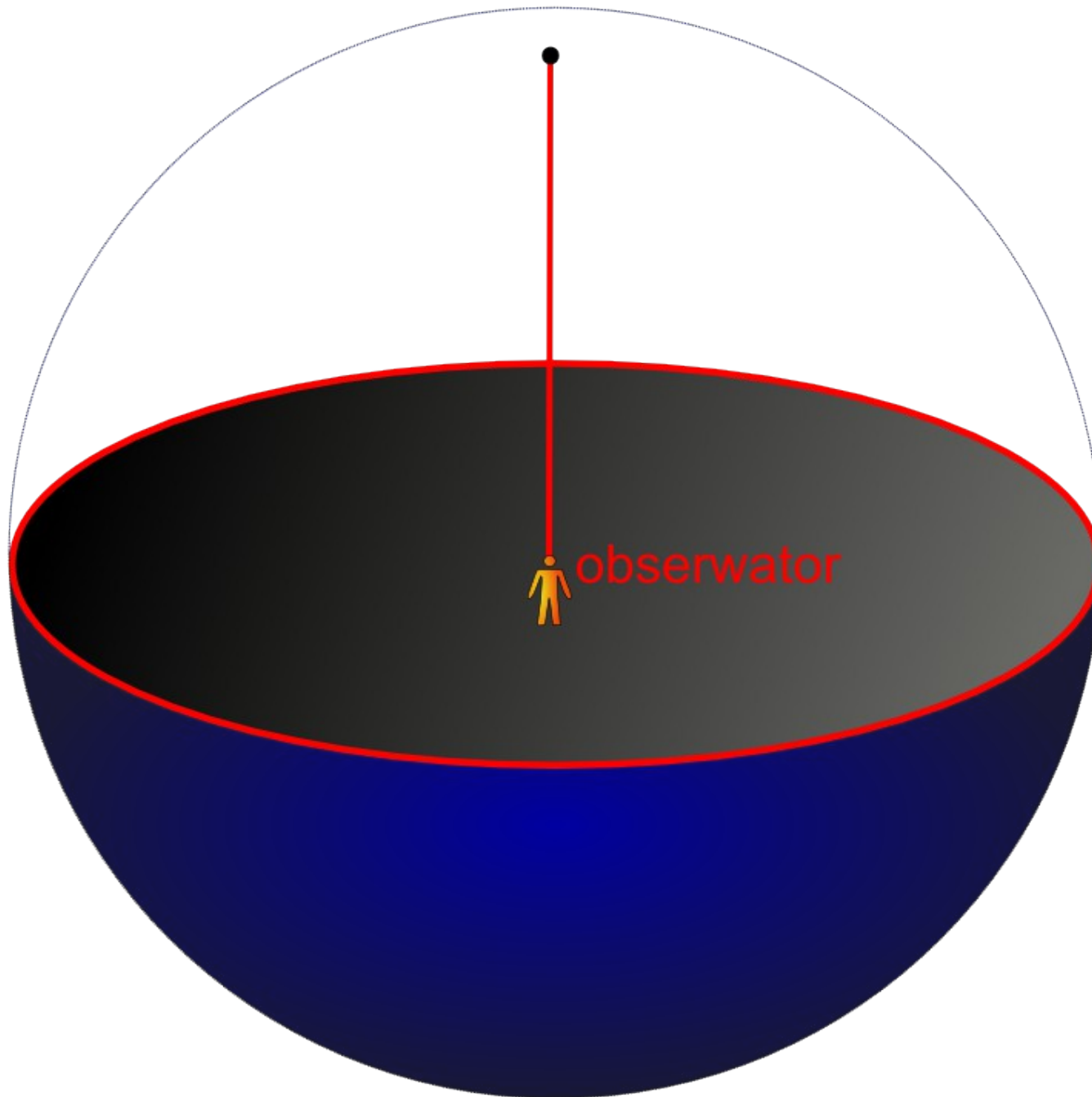


rys. Aldi (Wikimedia)

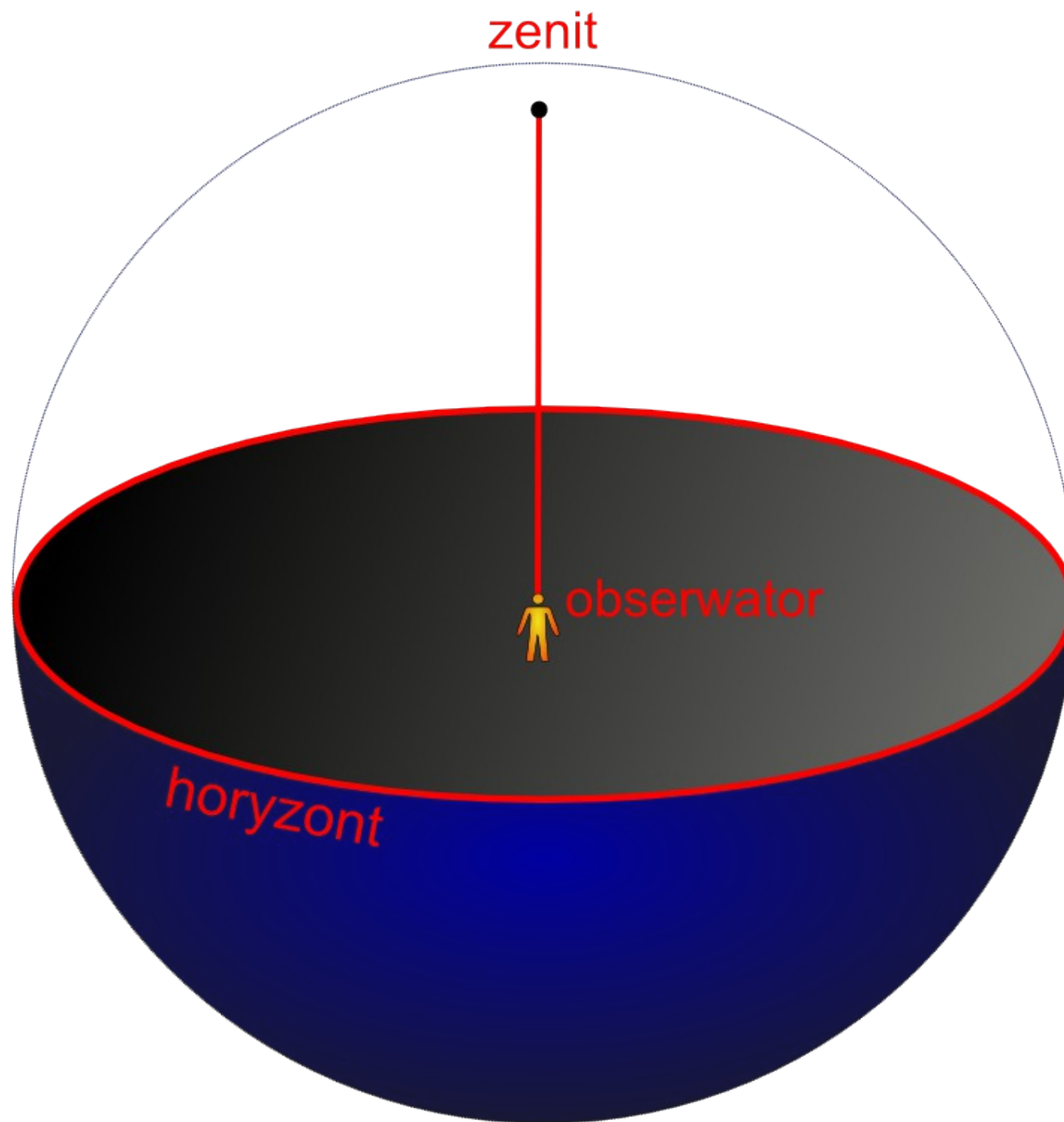
Elipsoida WGS84: $a=6378,137$ km $b=6356,752$ km

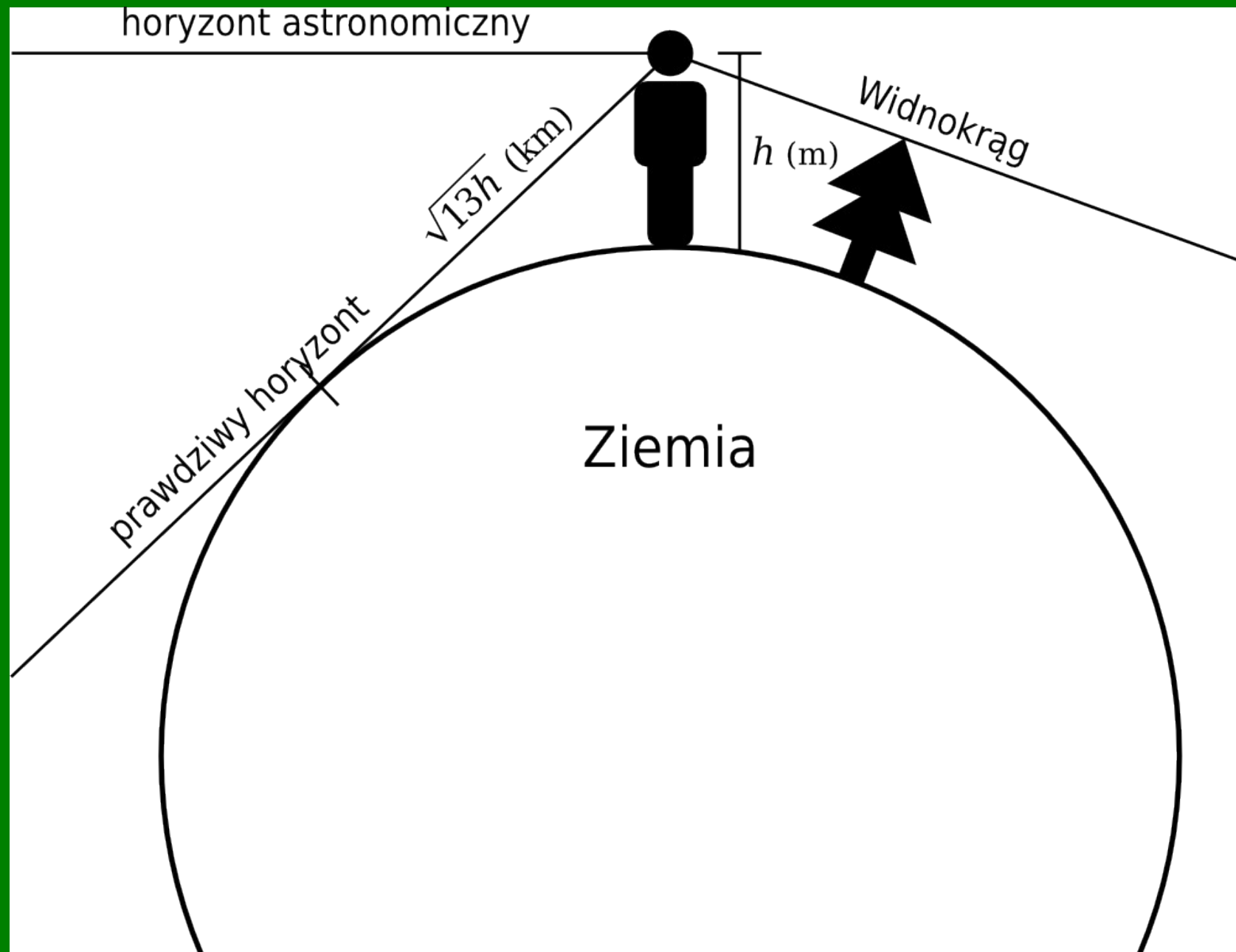


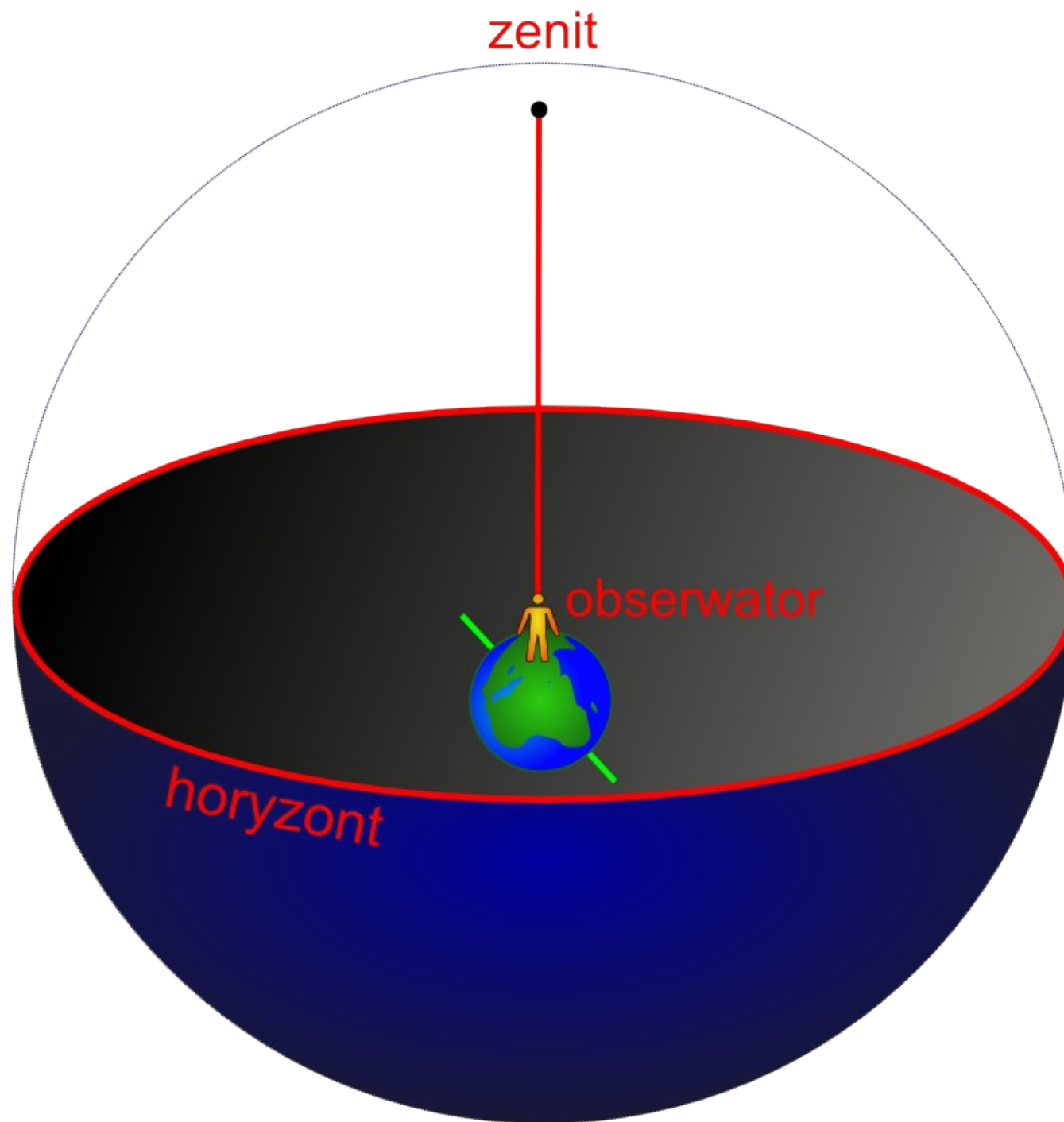
zenit

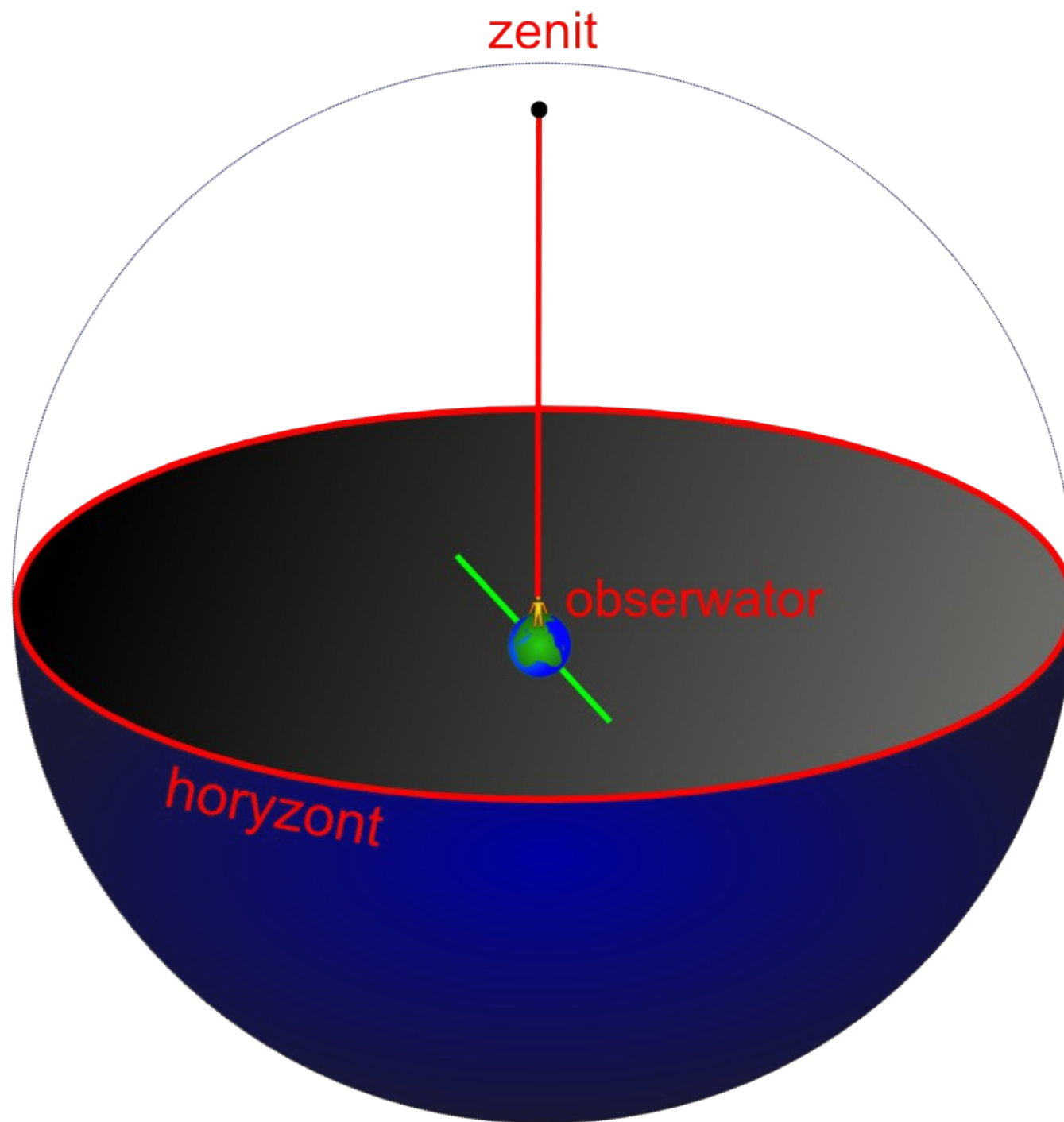


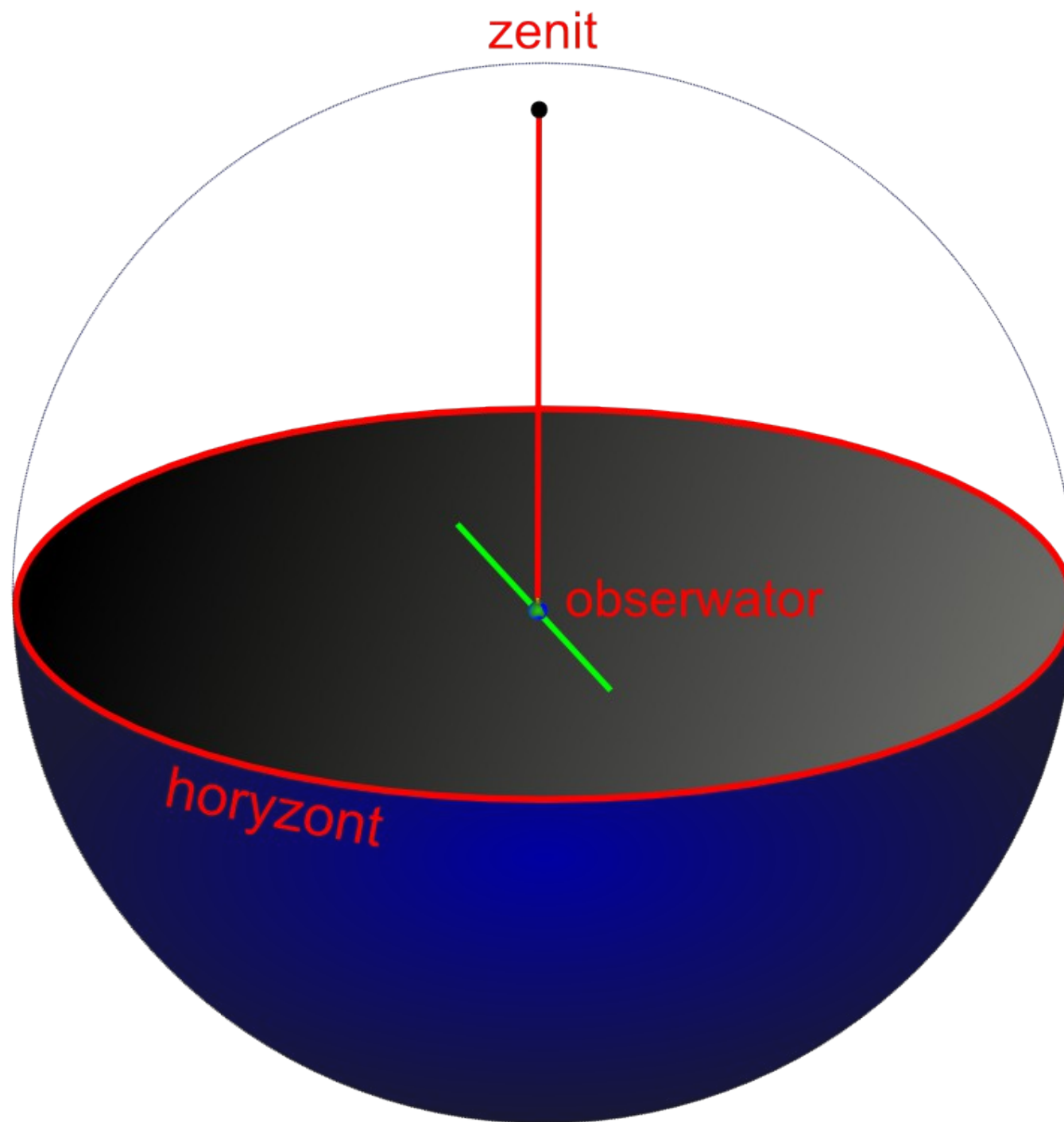
observer

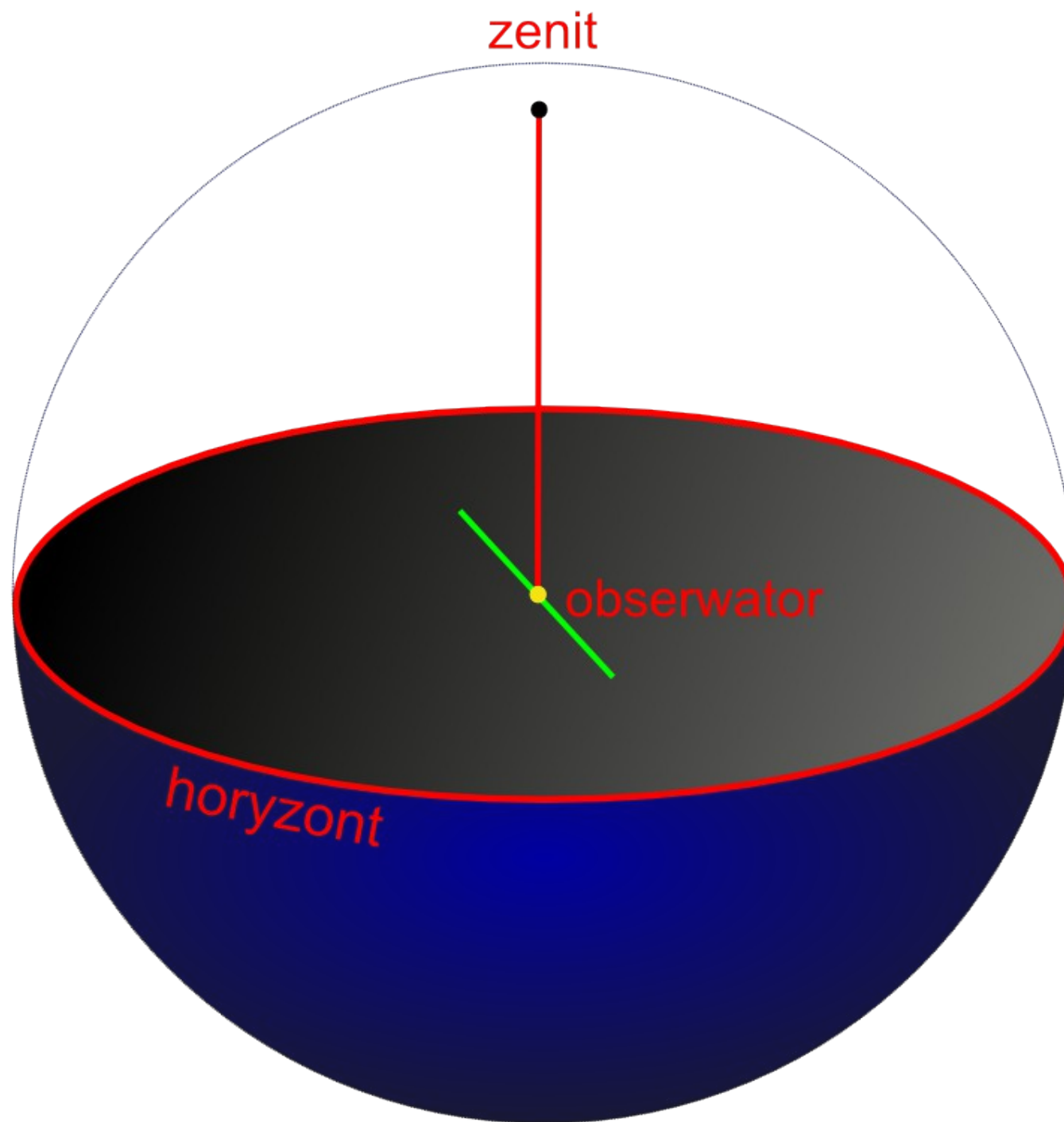


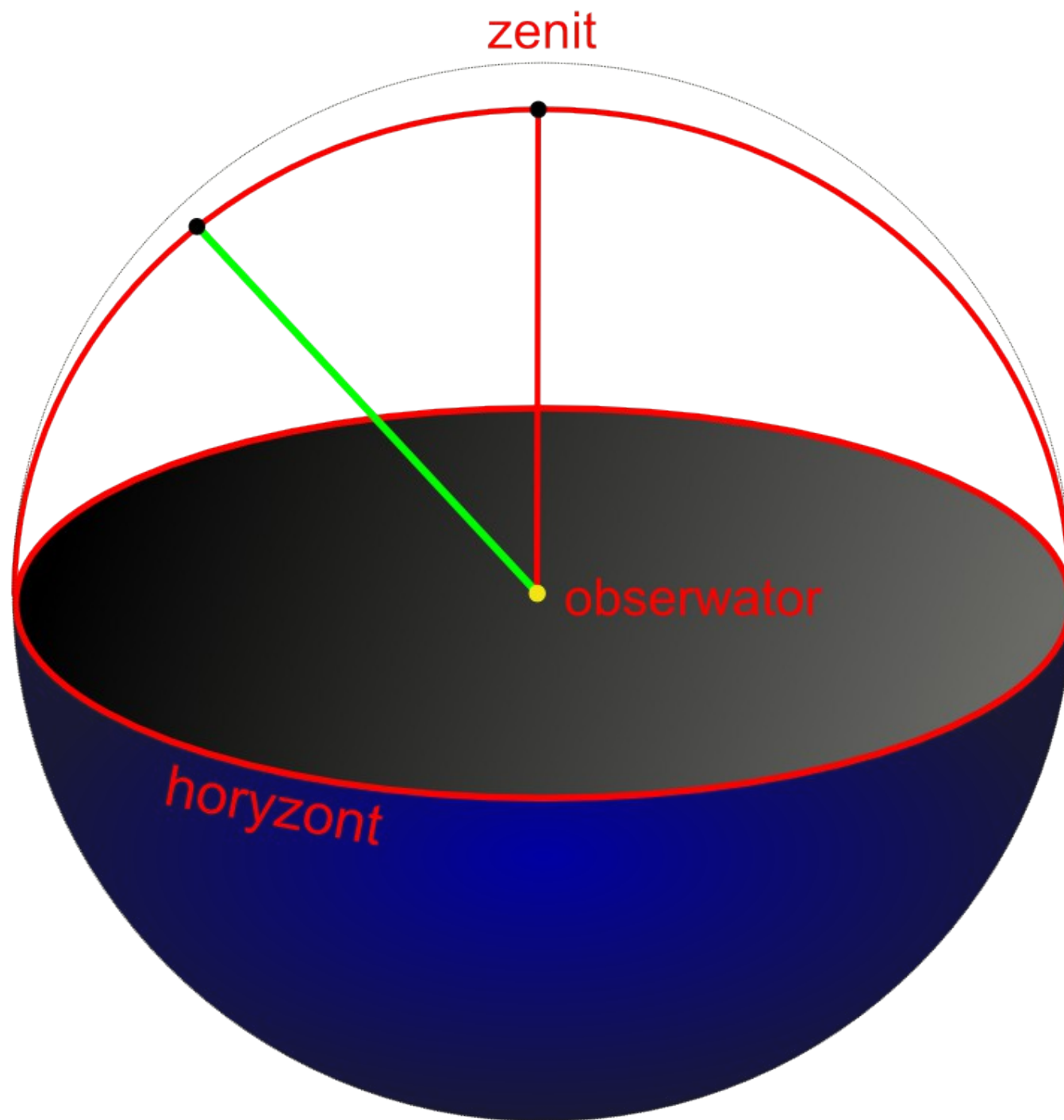


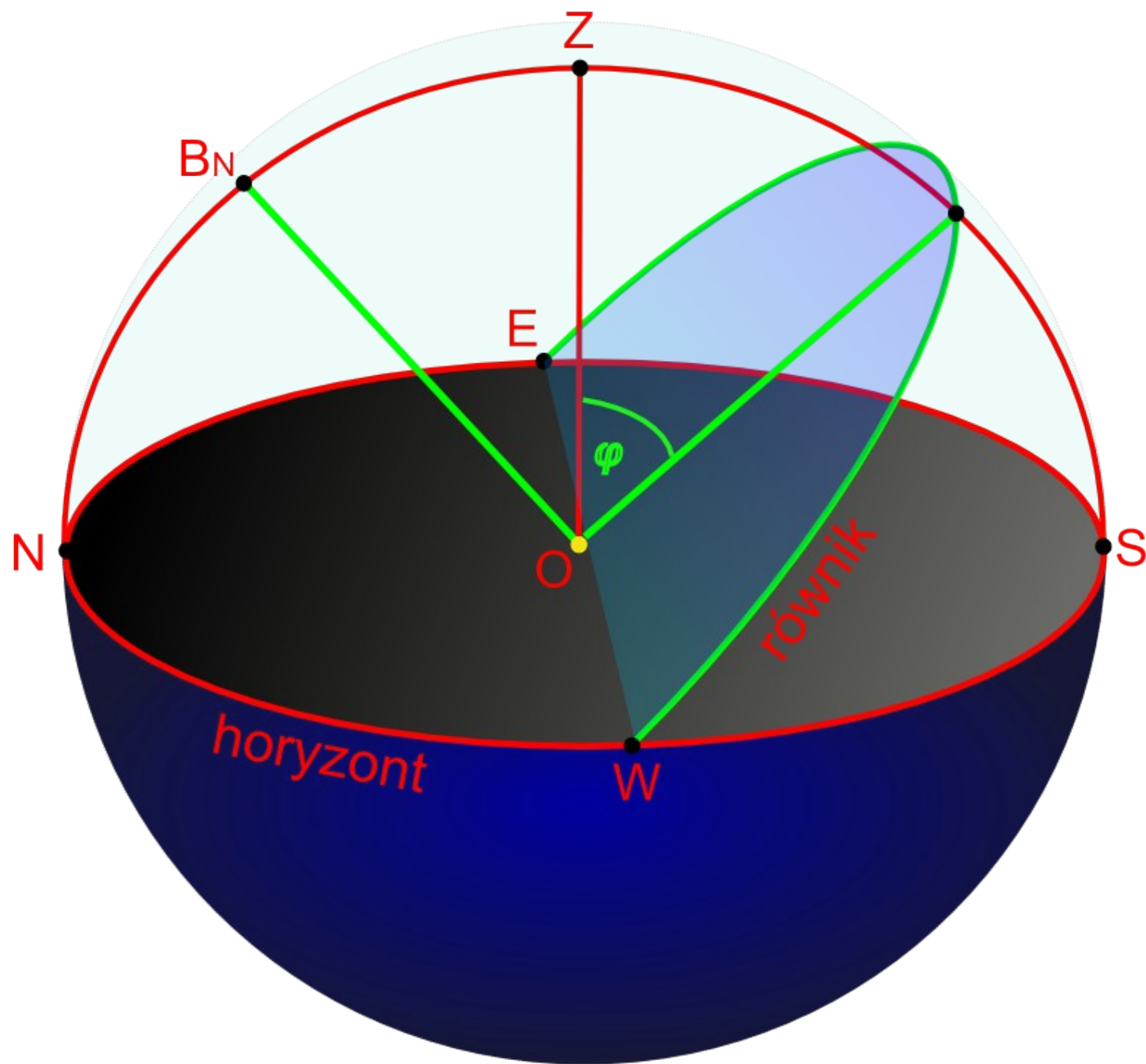


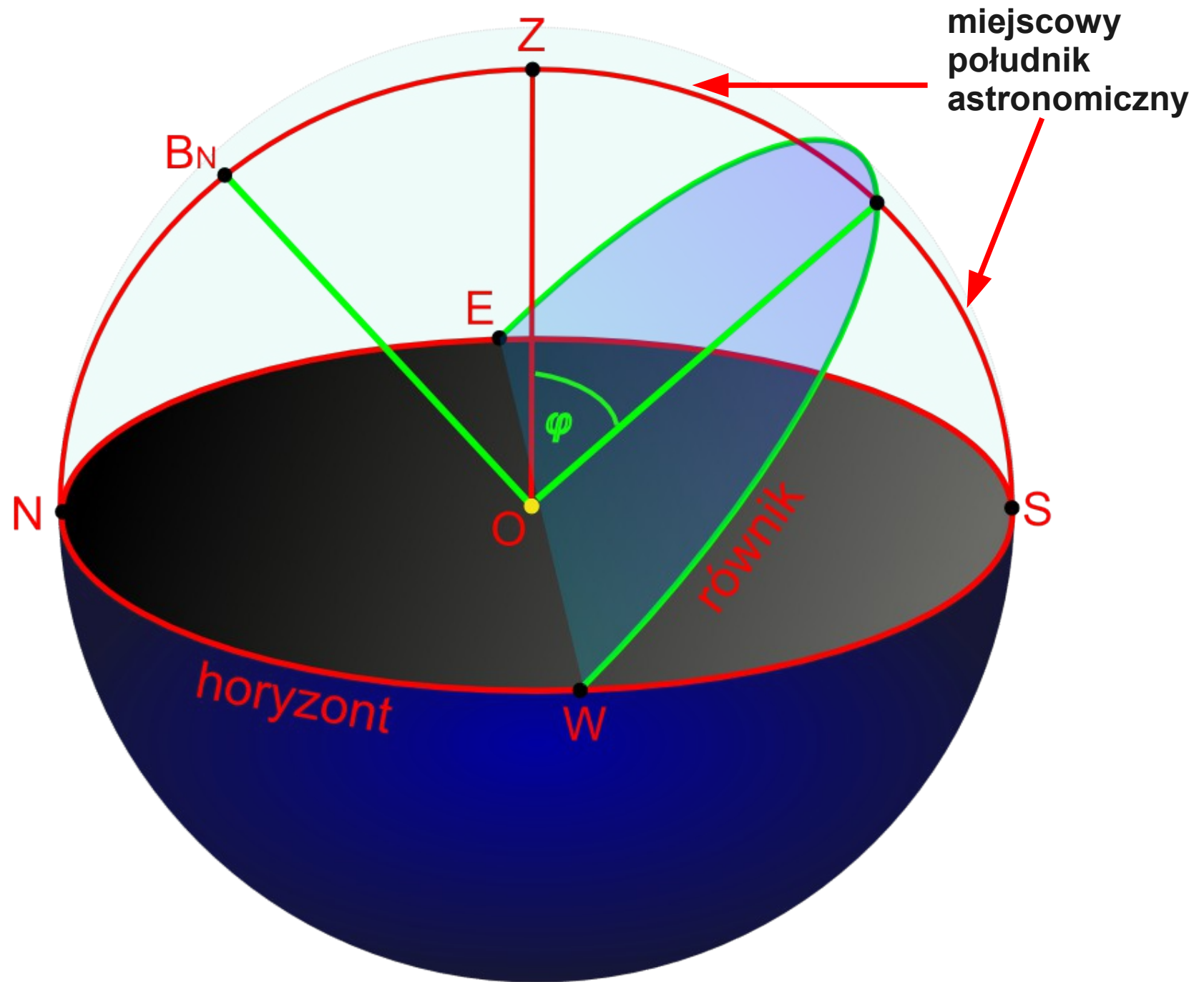


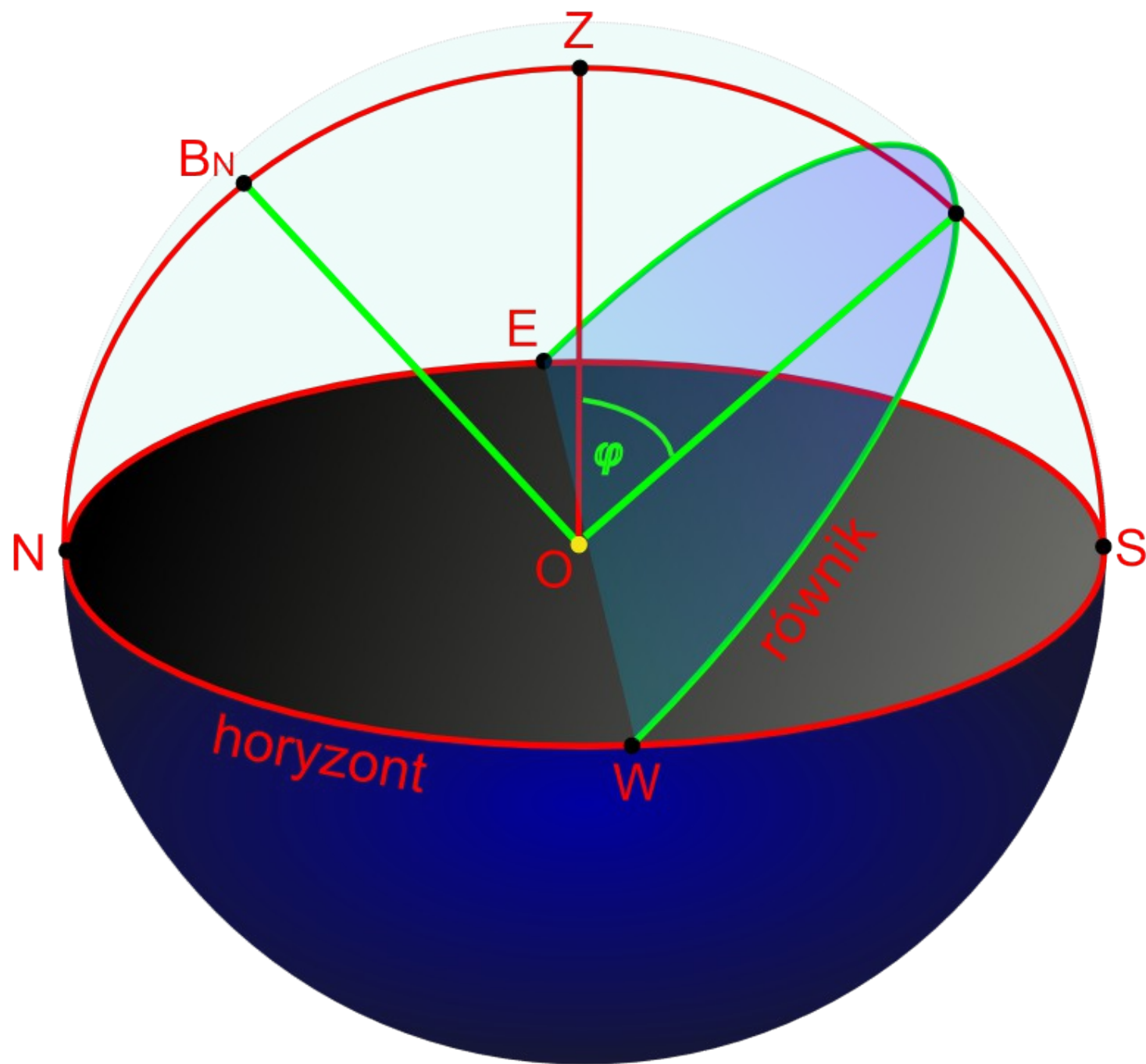


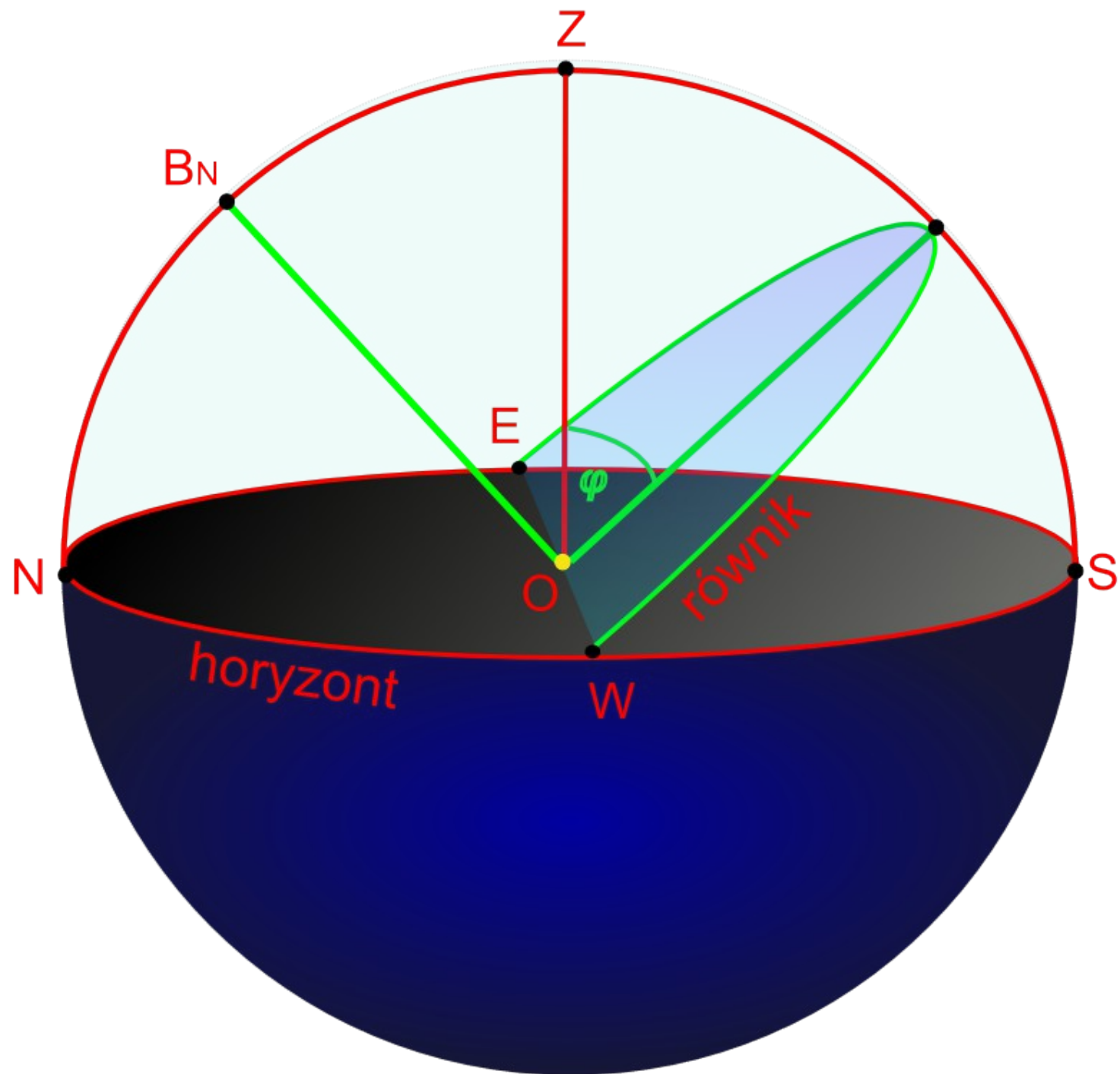


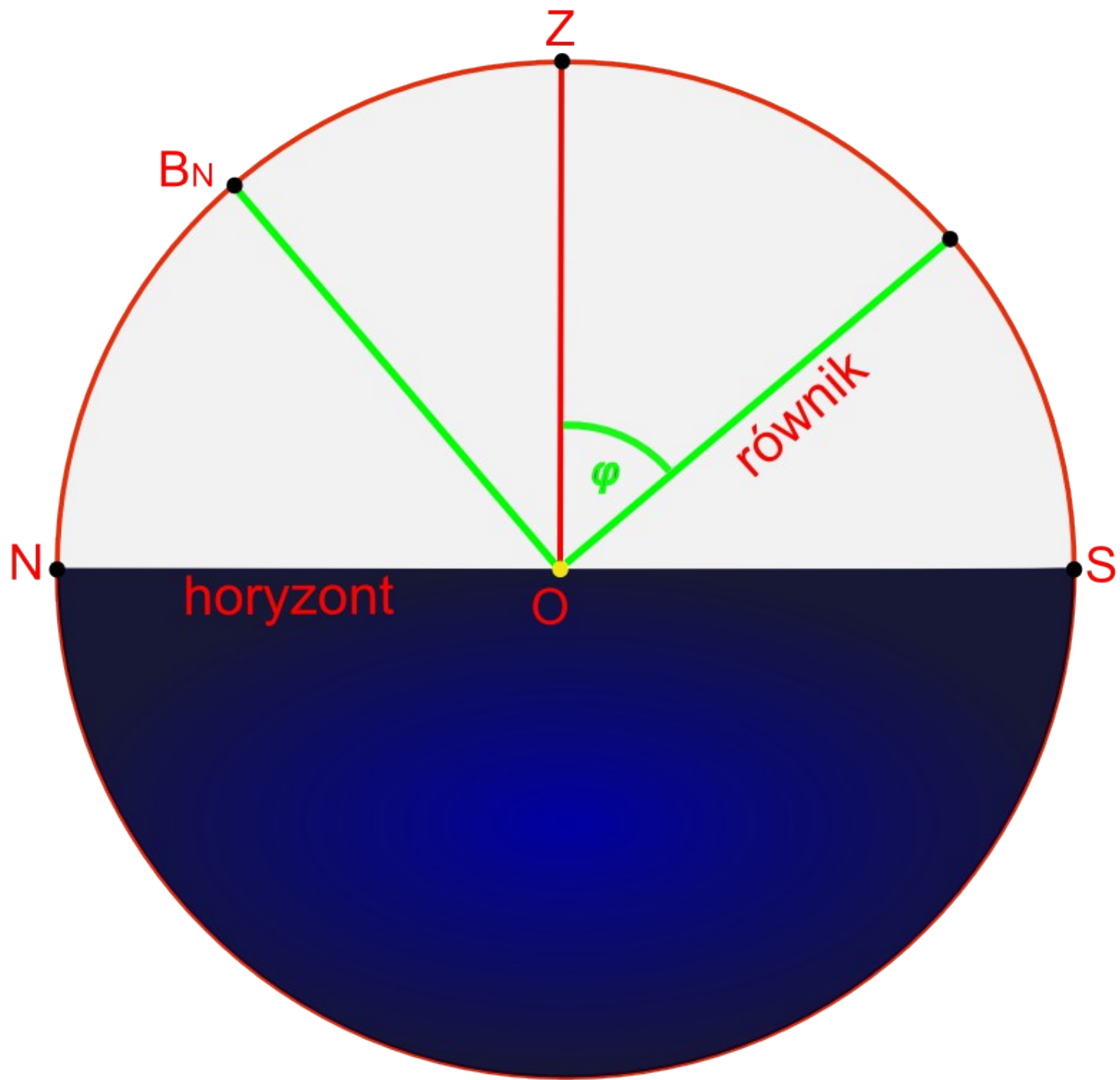




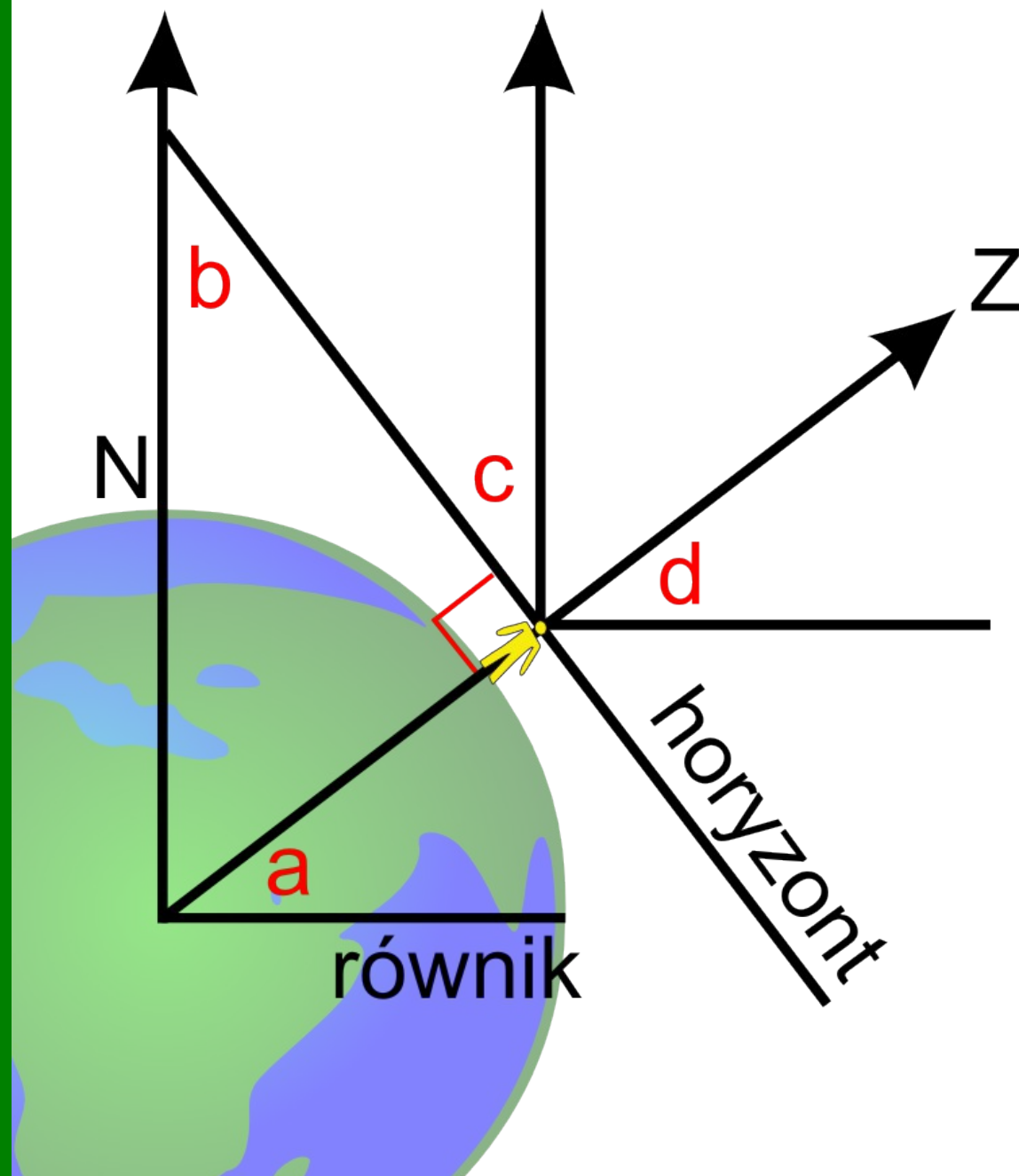




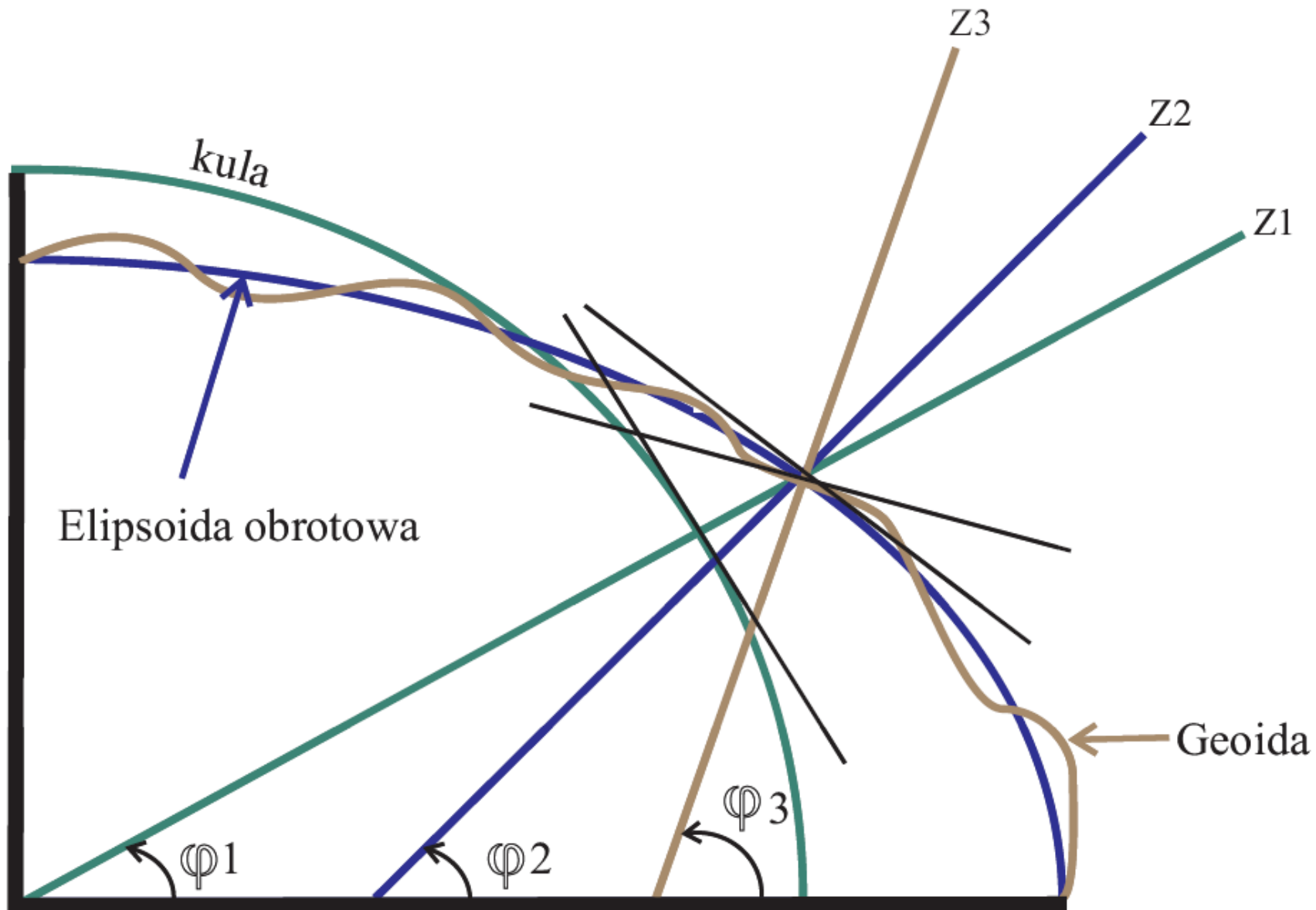


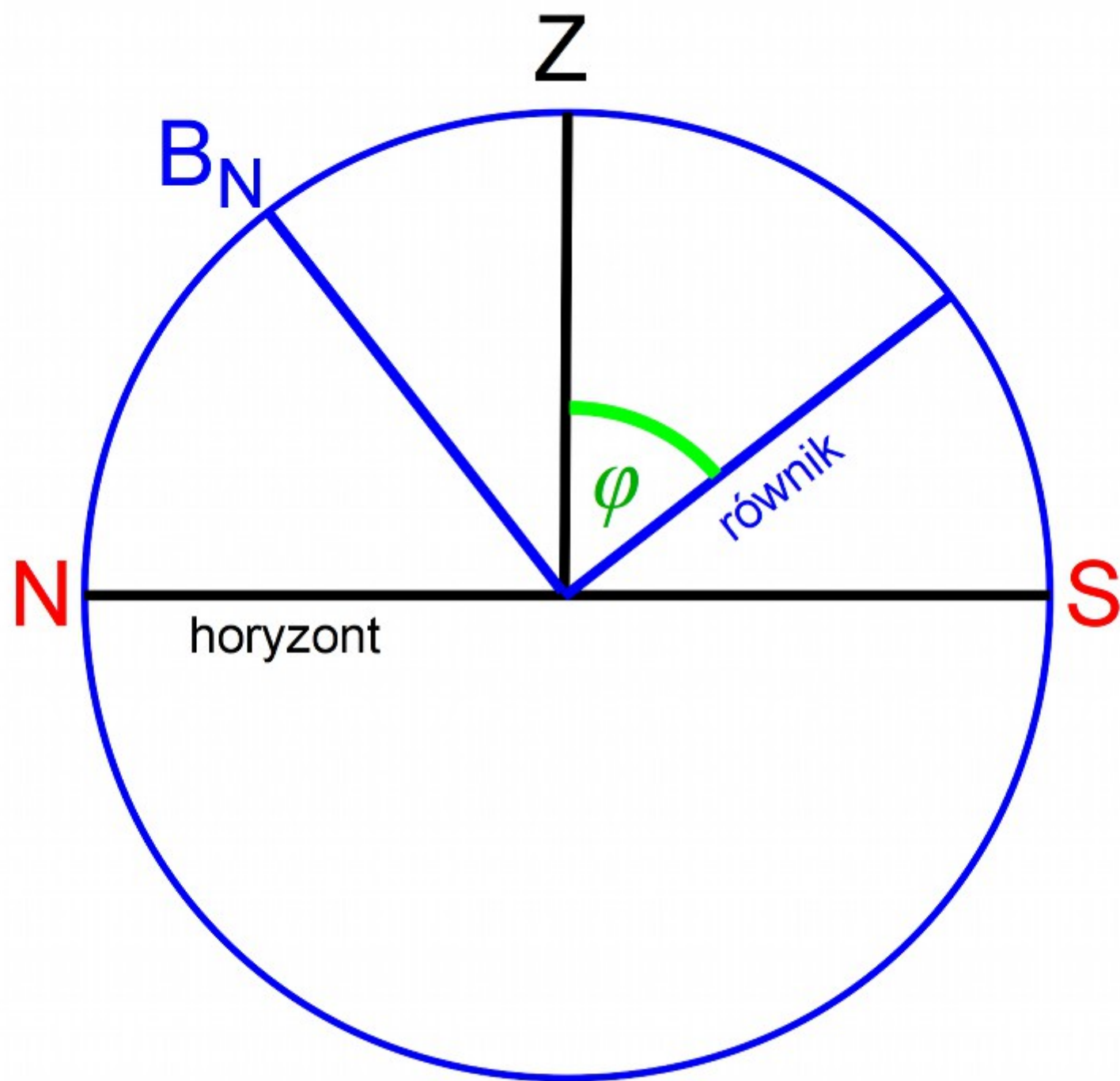


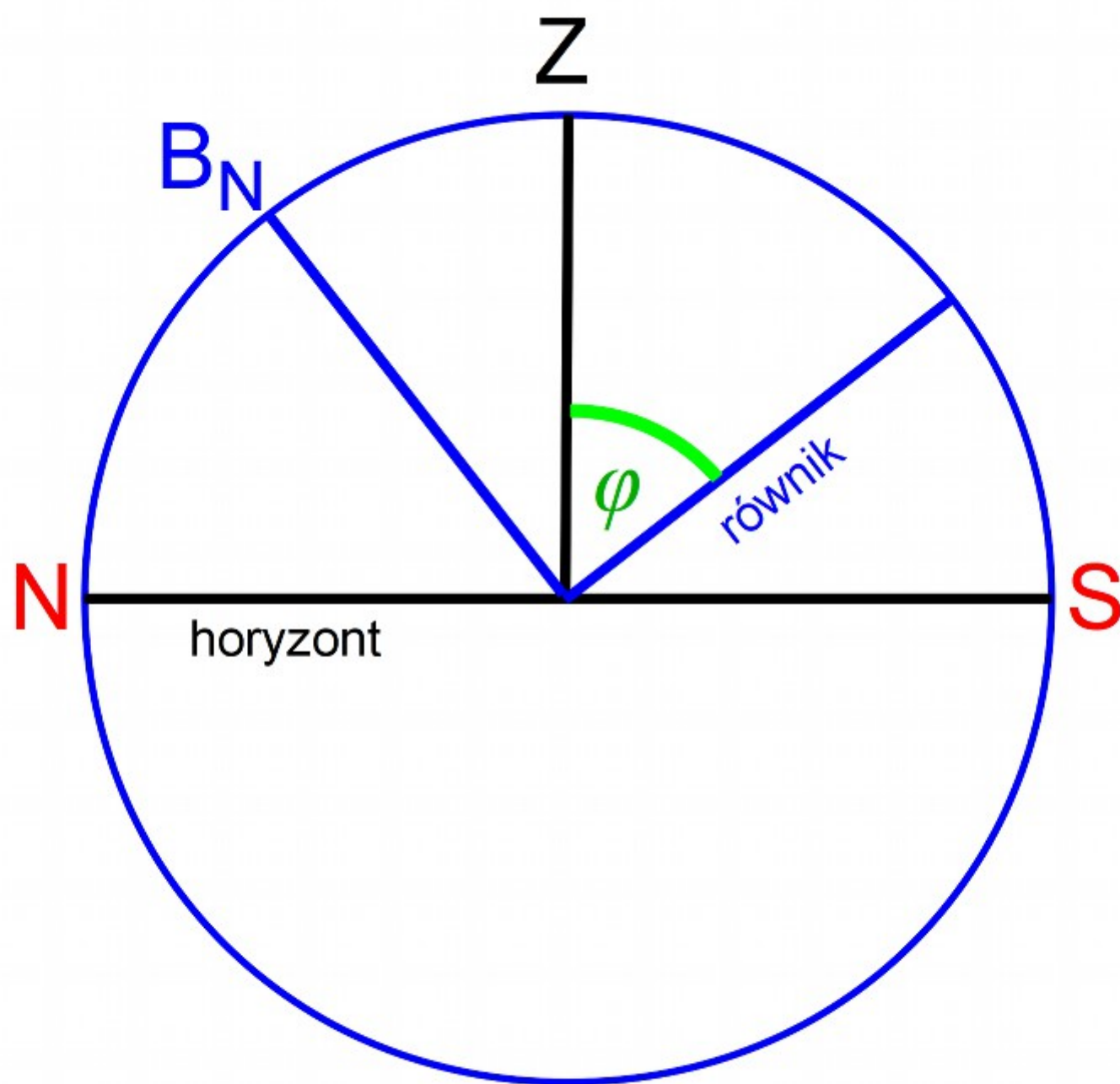
do Bieguna Świata



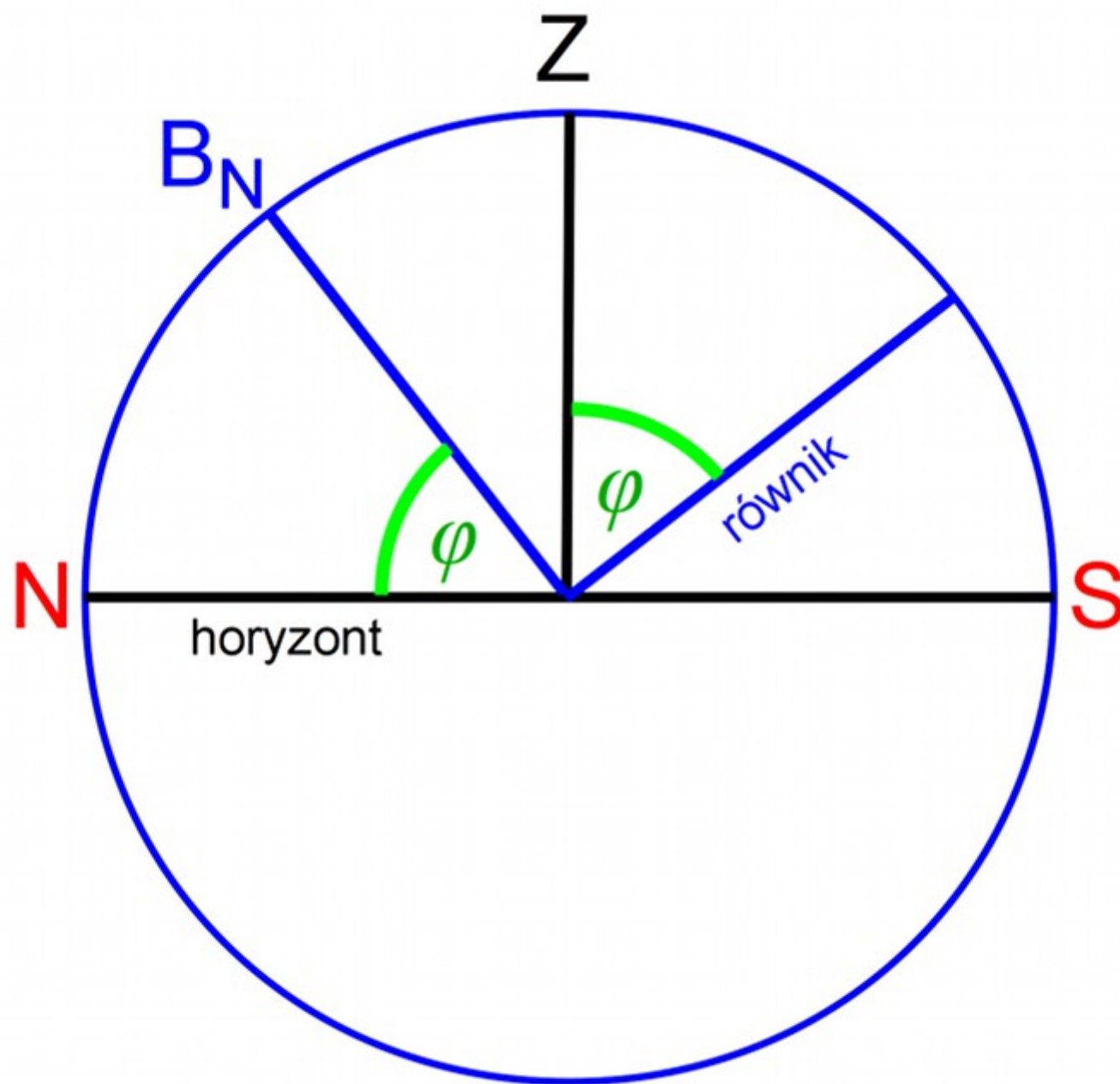
Geocentryczna, geodezyjna i astronomiczna, szerokość geograficzna.



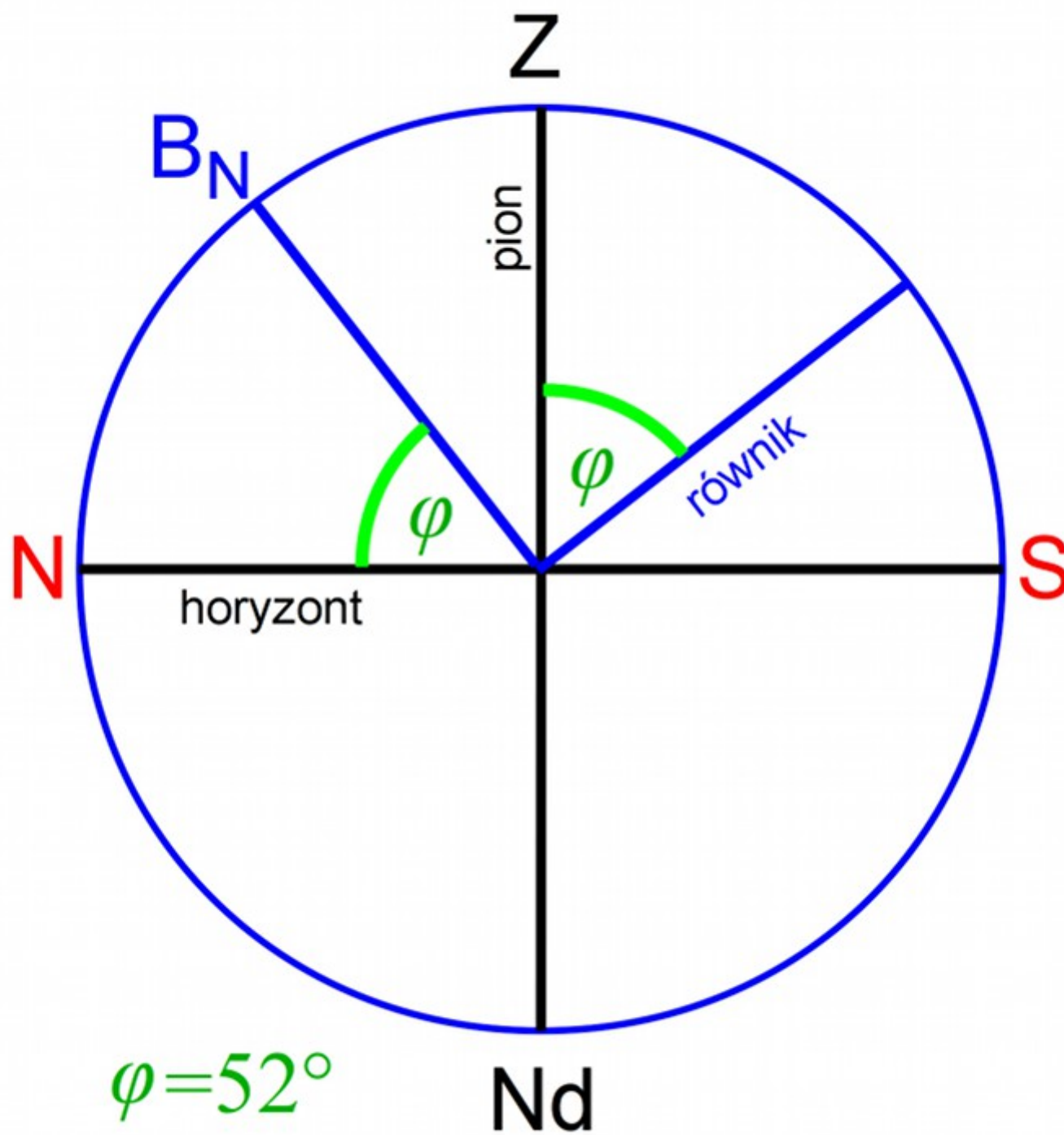


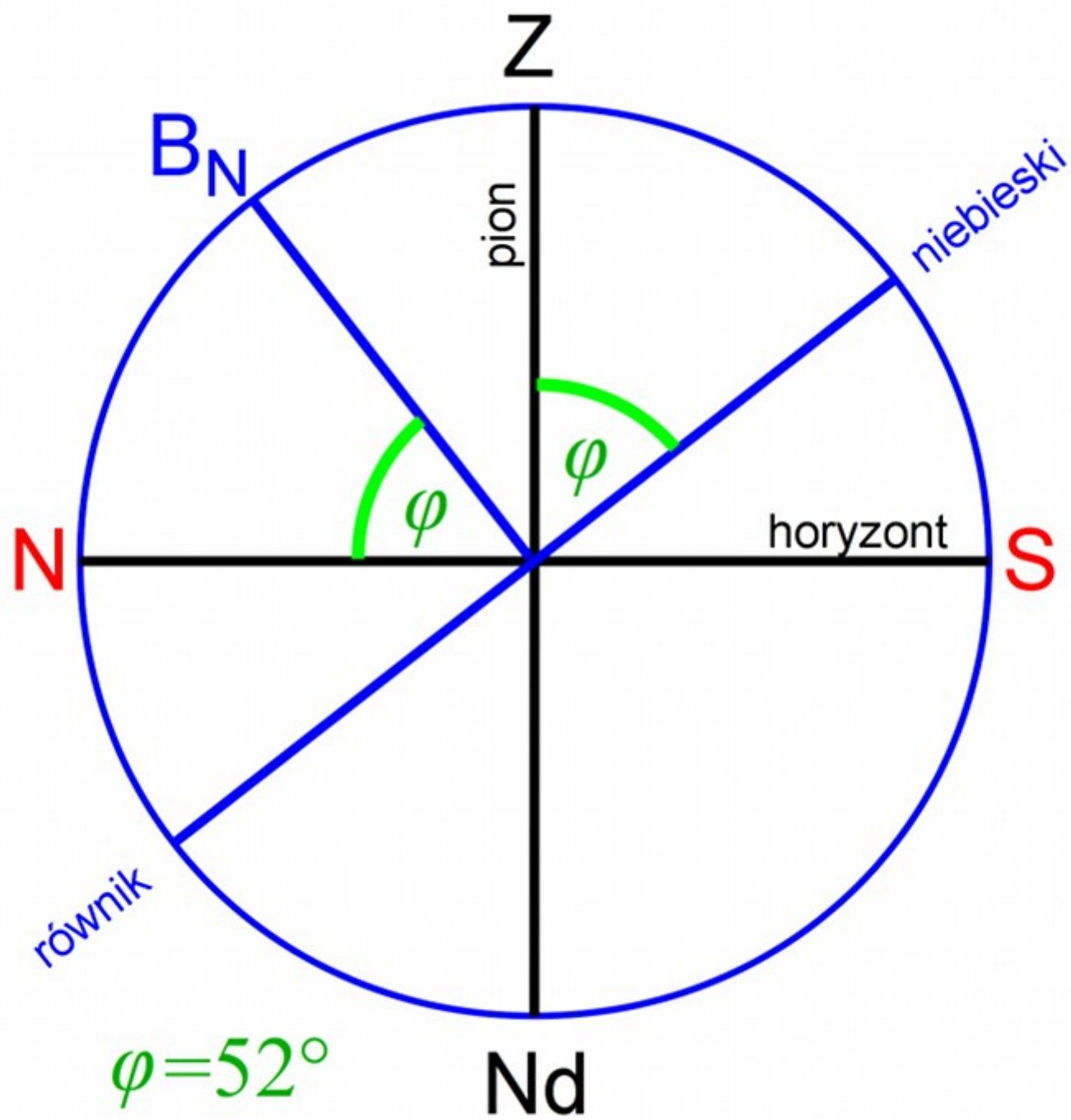


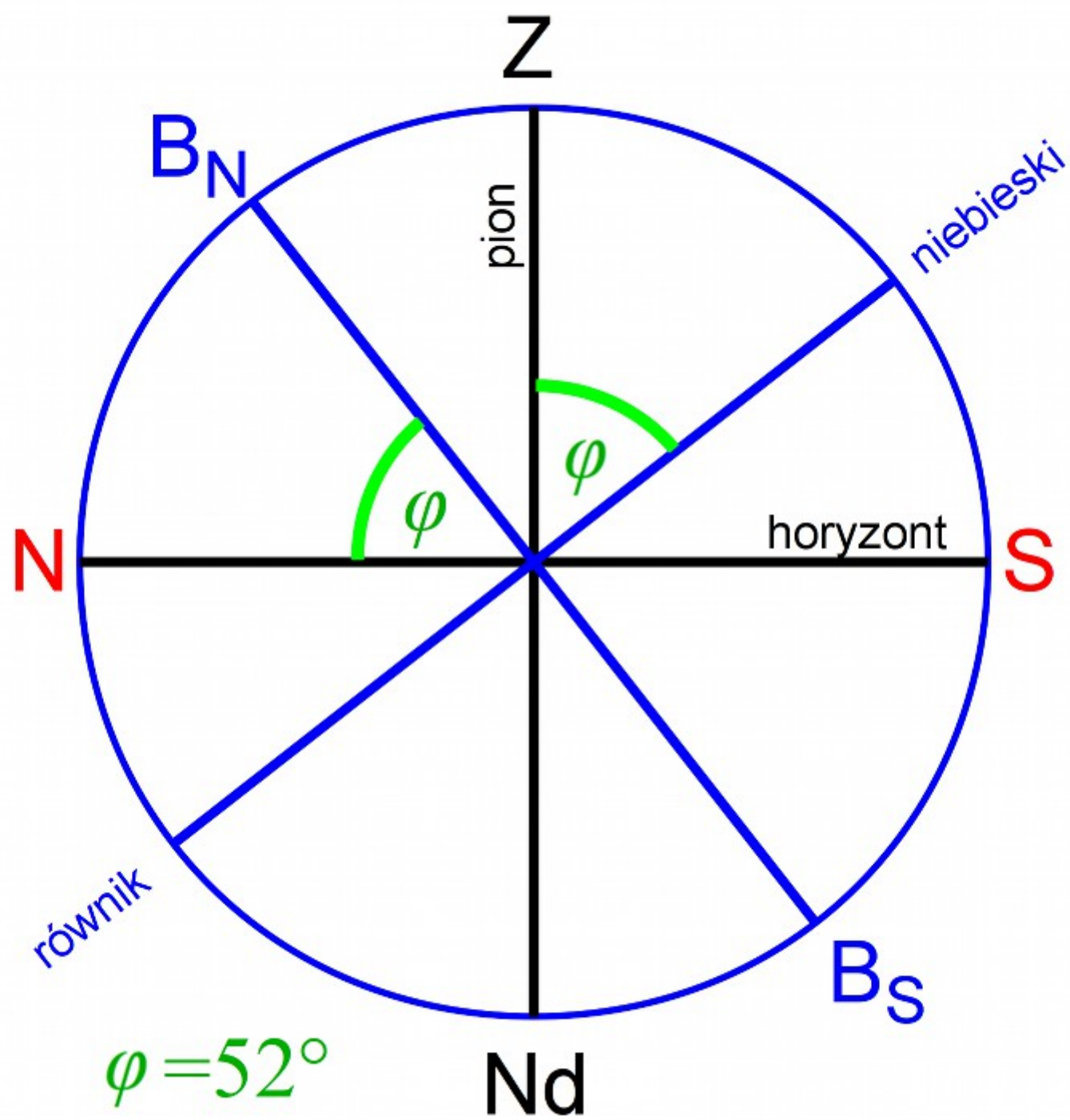
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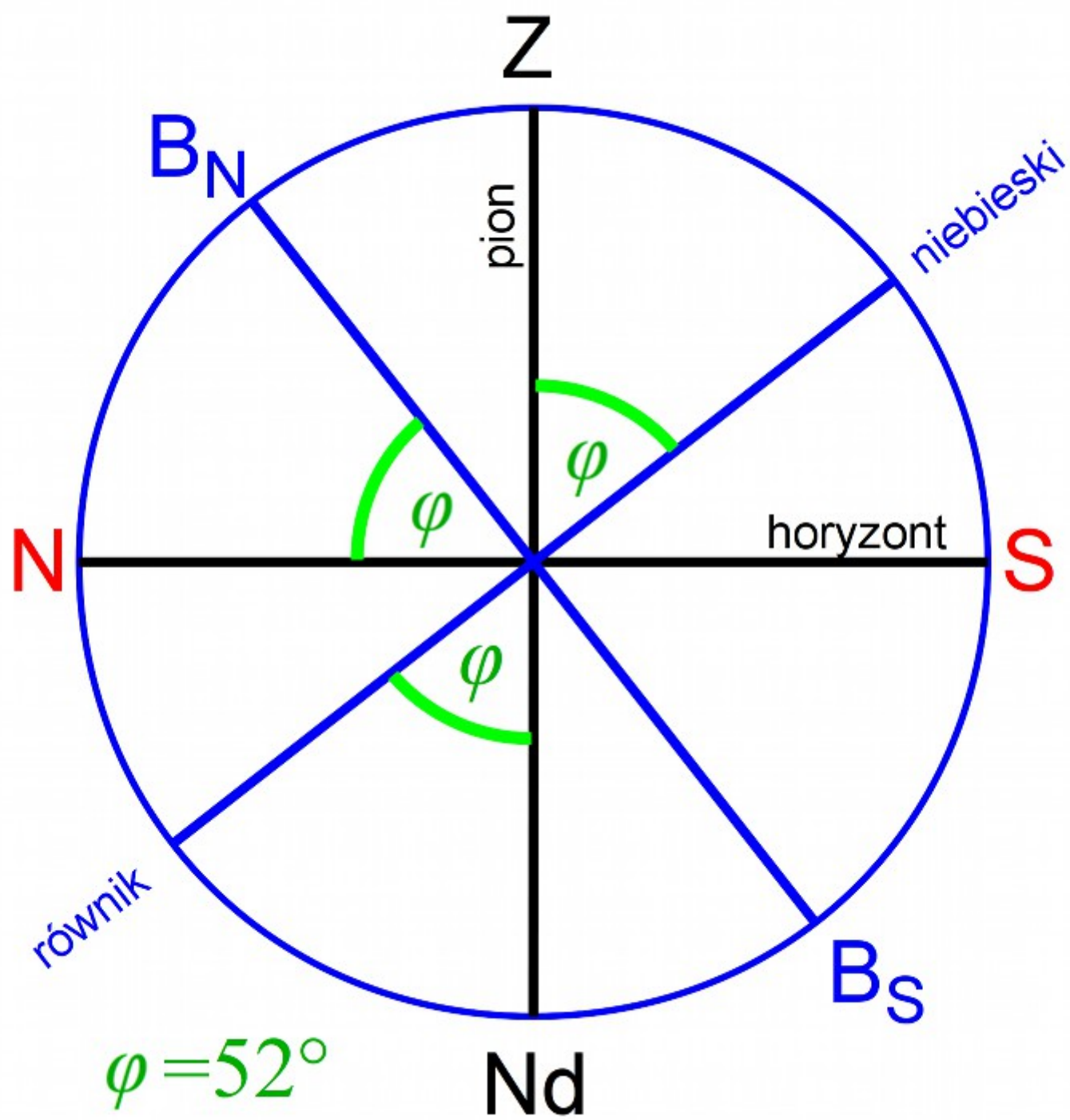


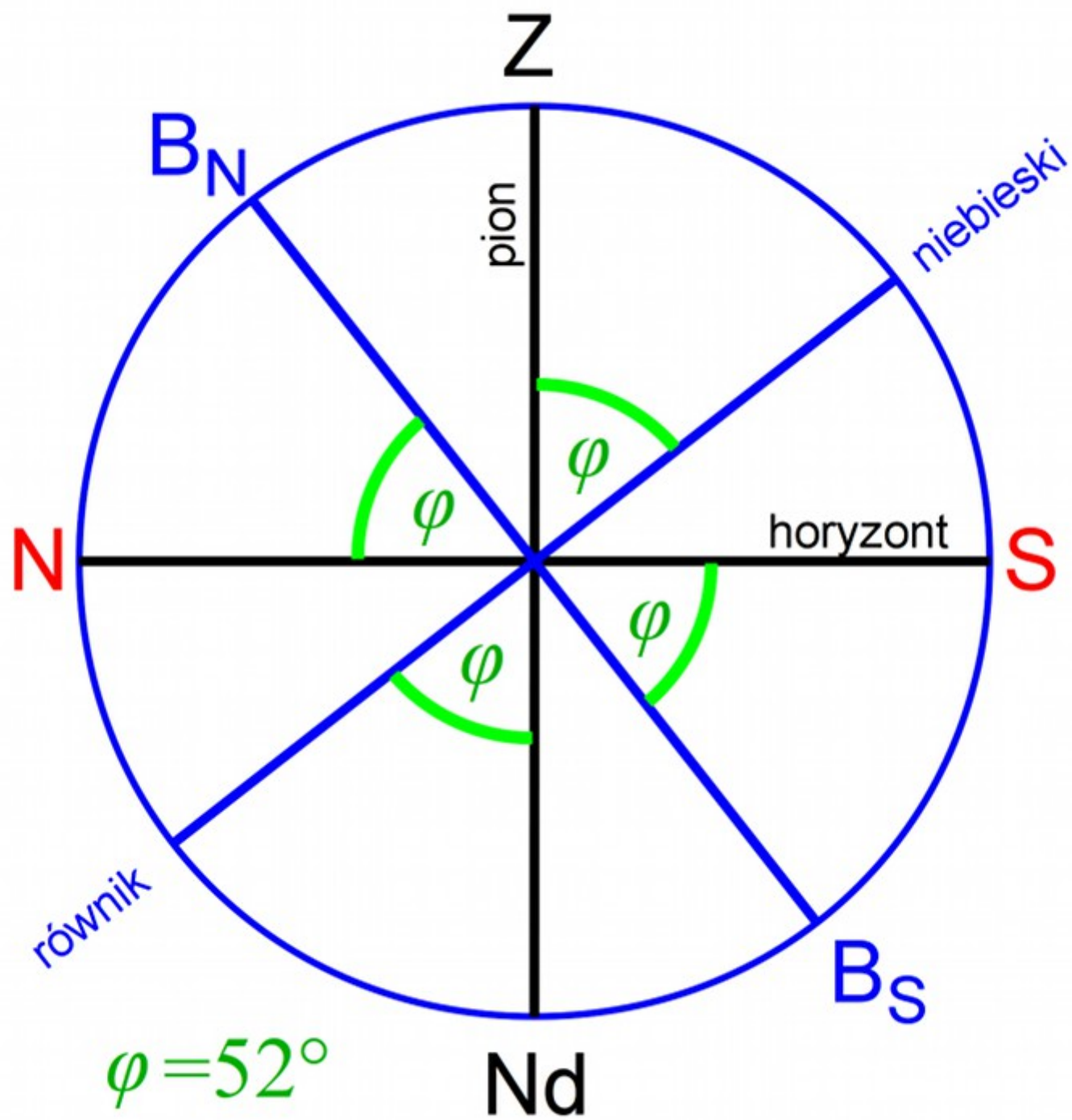
$$\varphi = 52^\circ$$

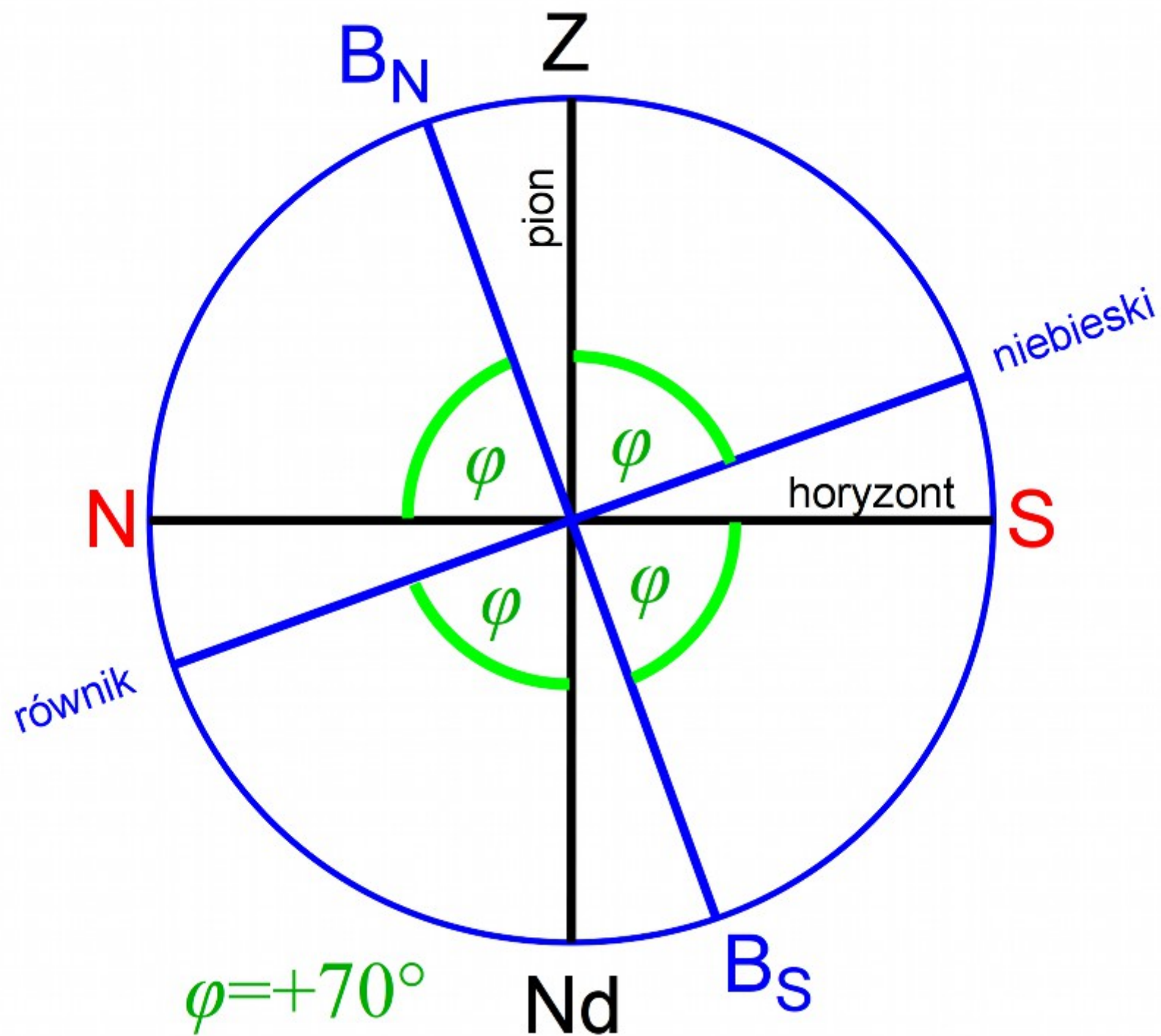


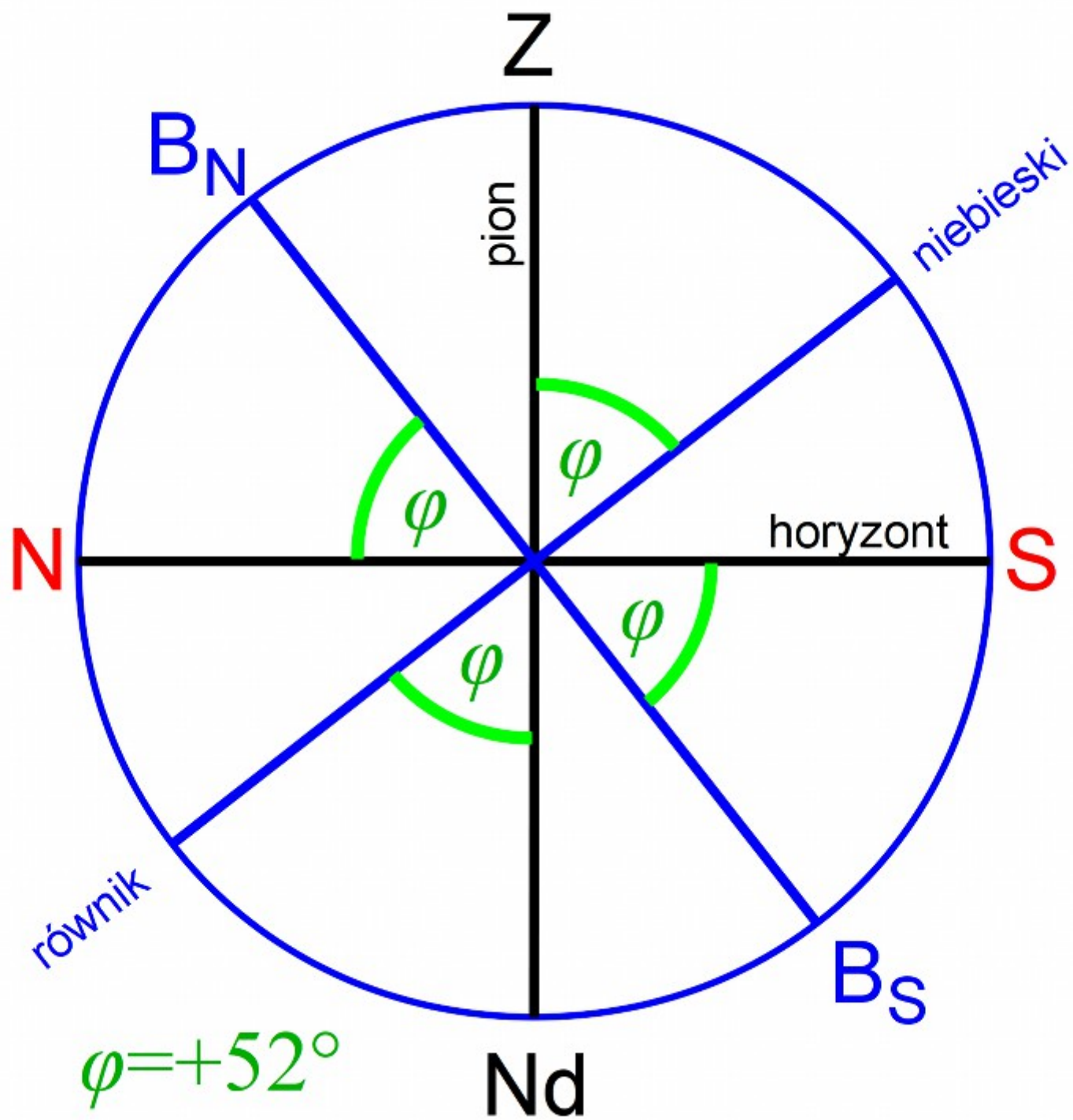


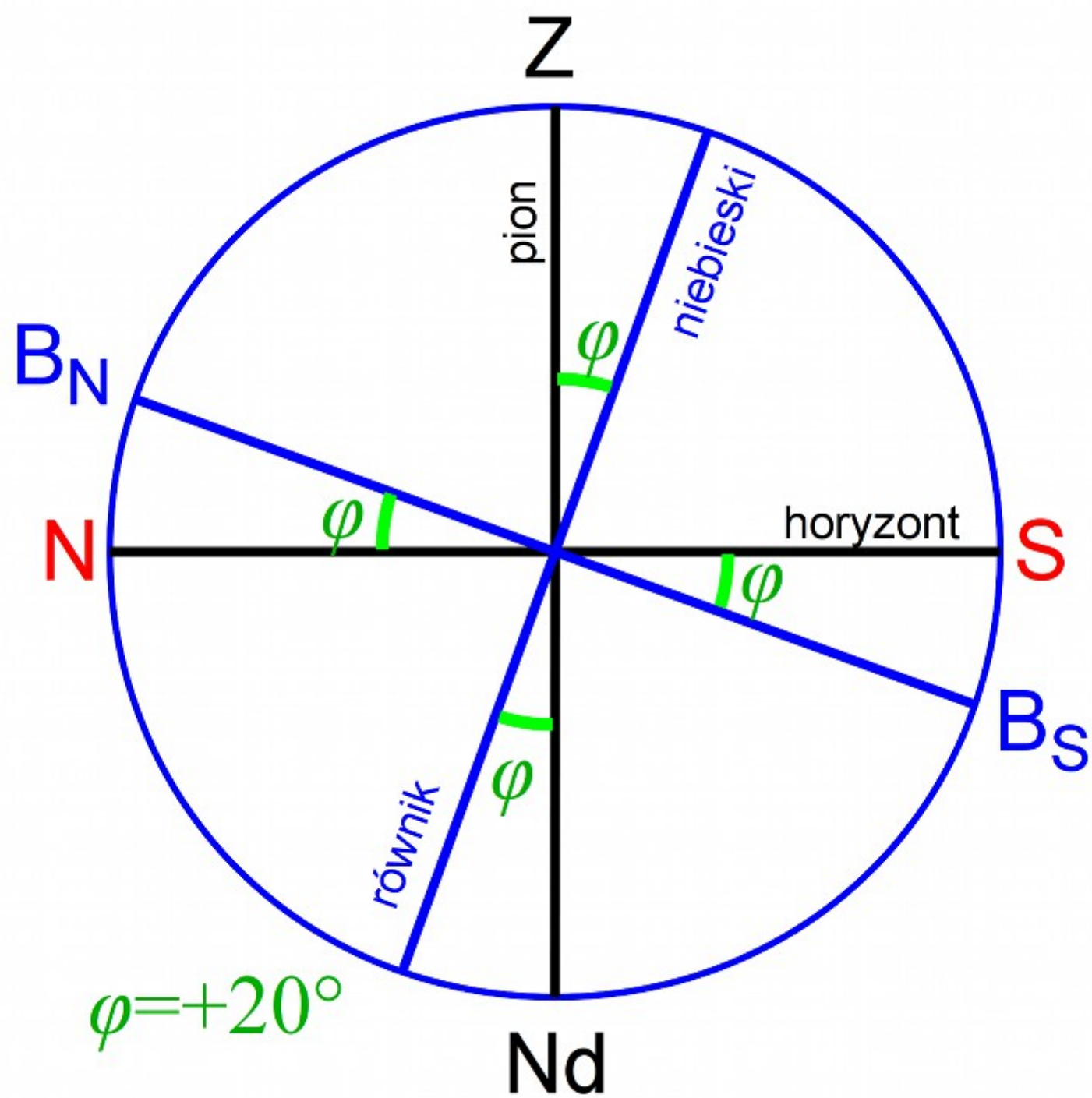


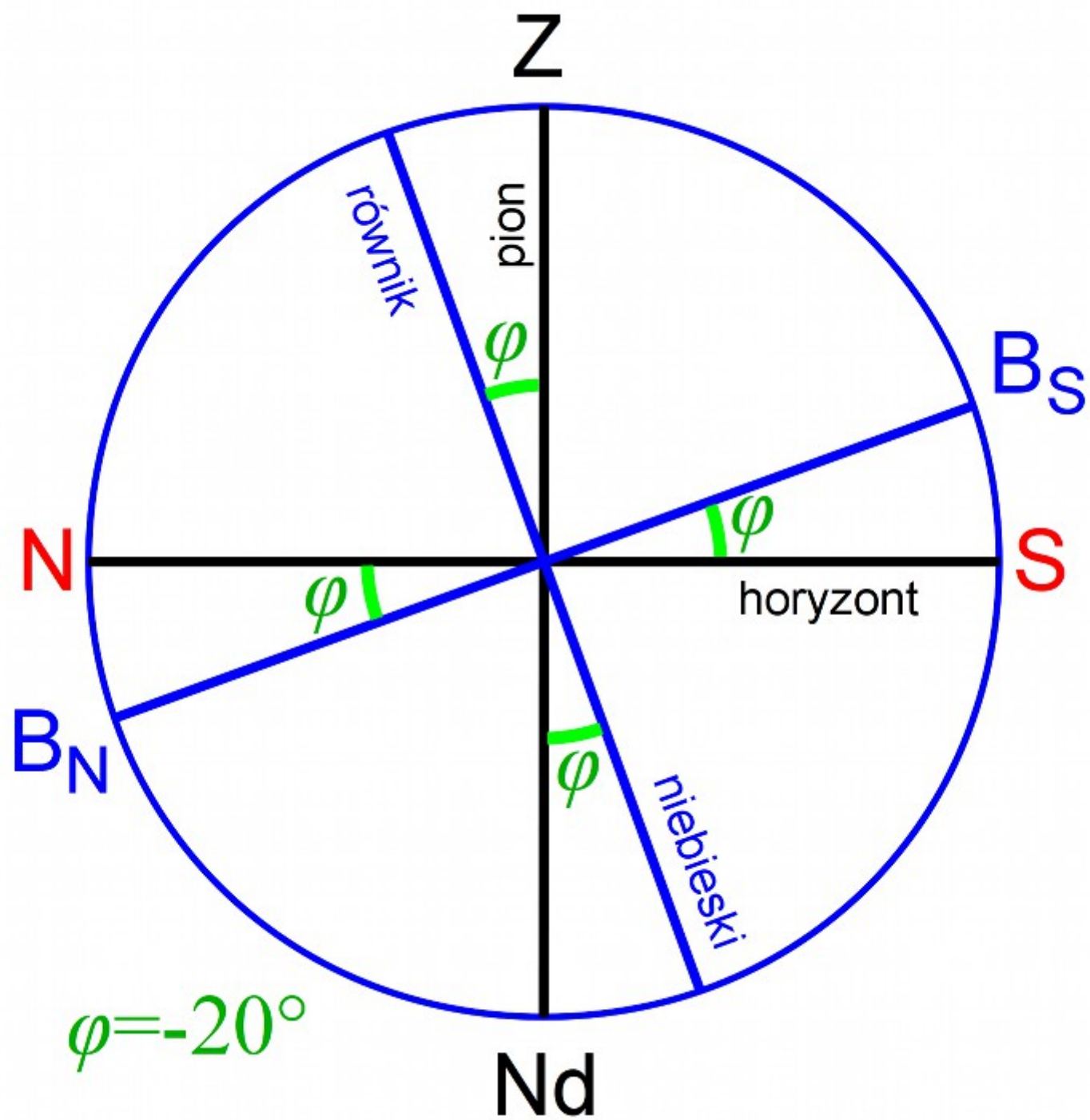




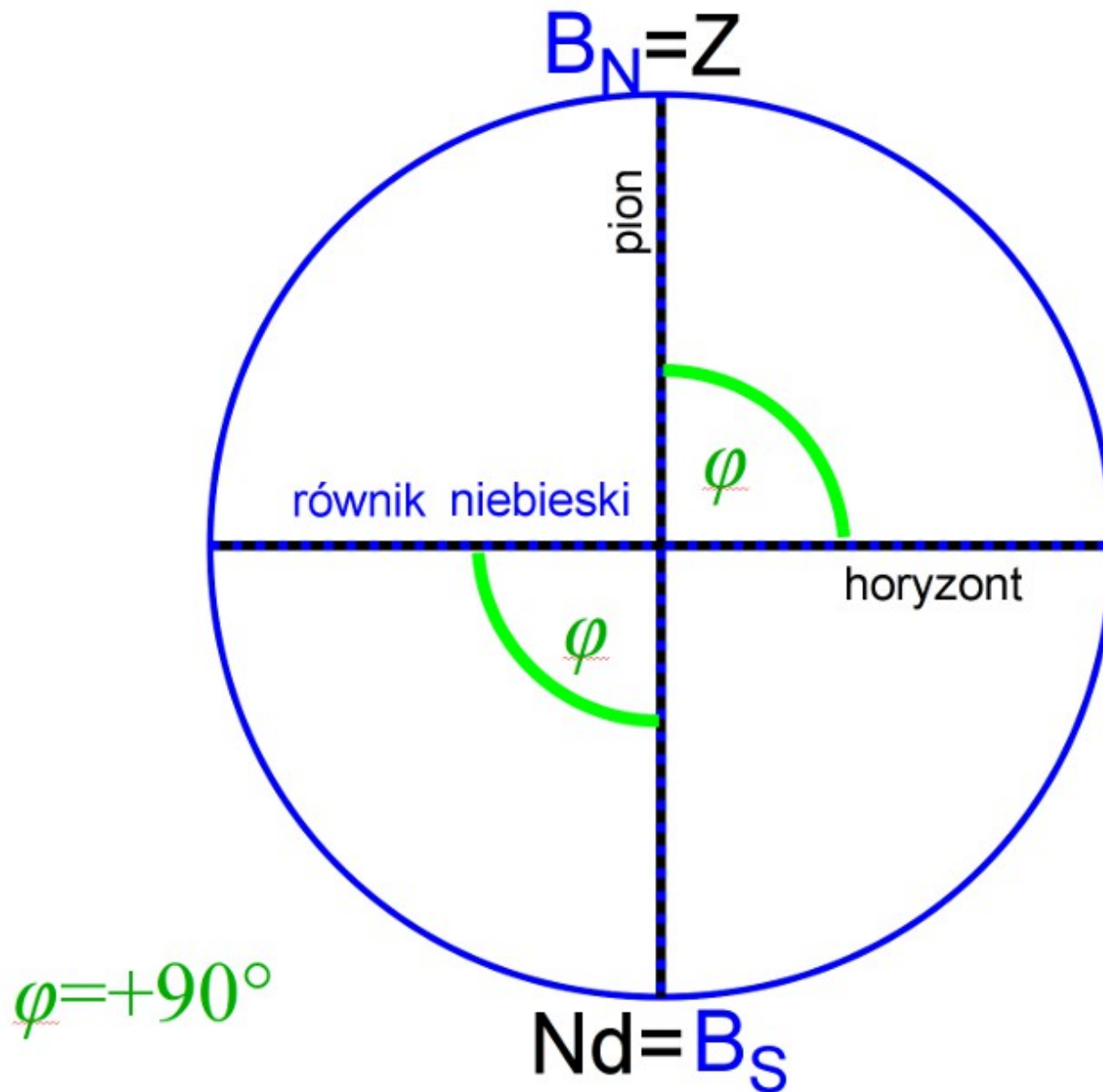




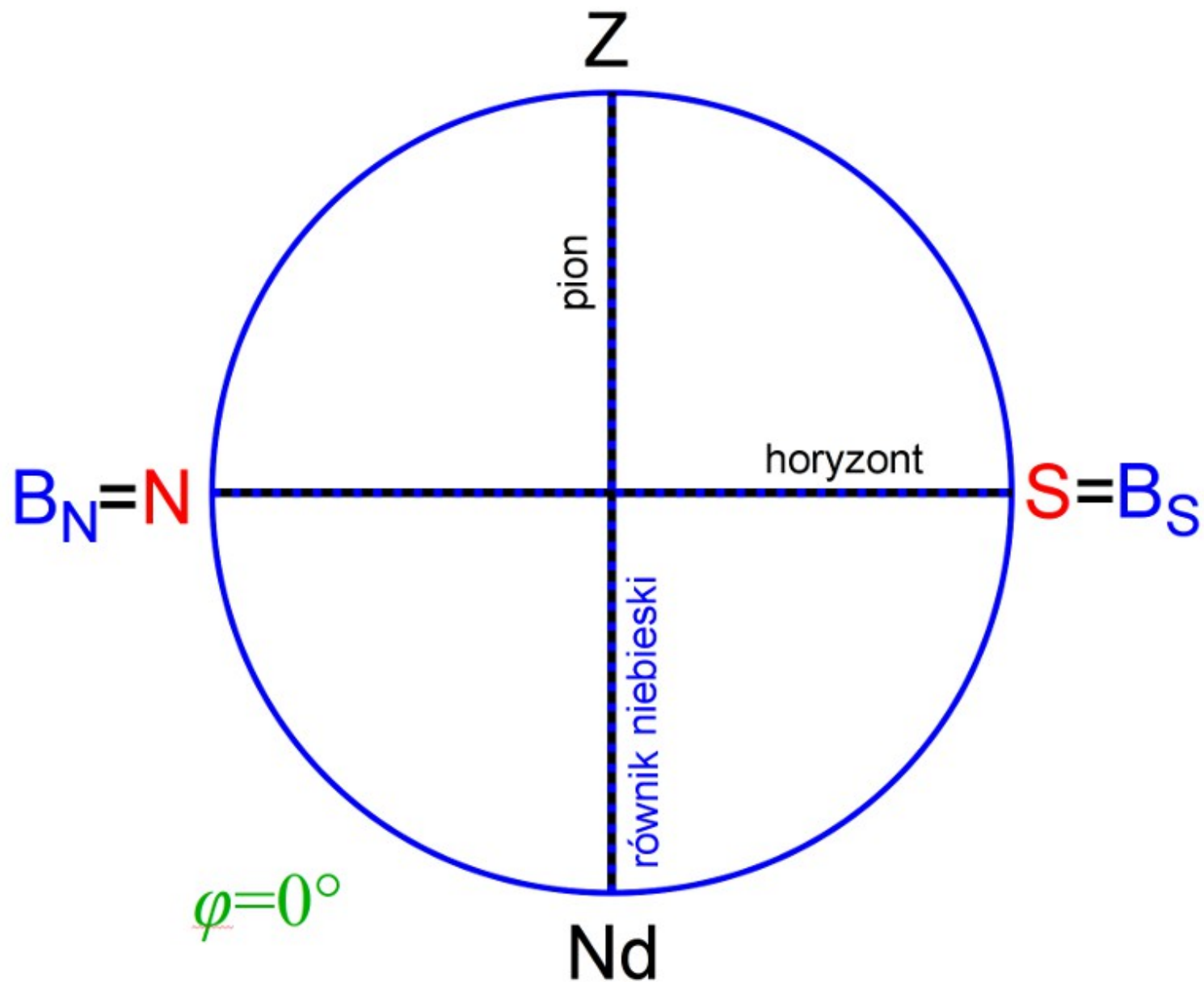


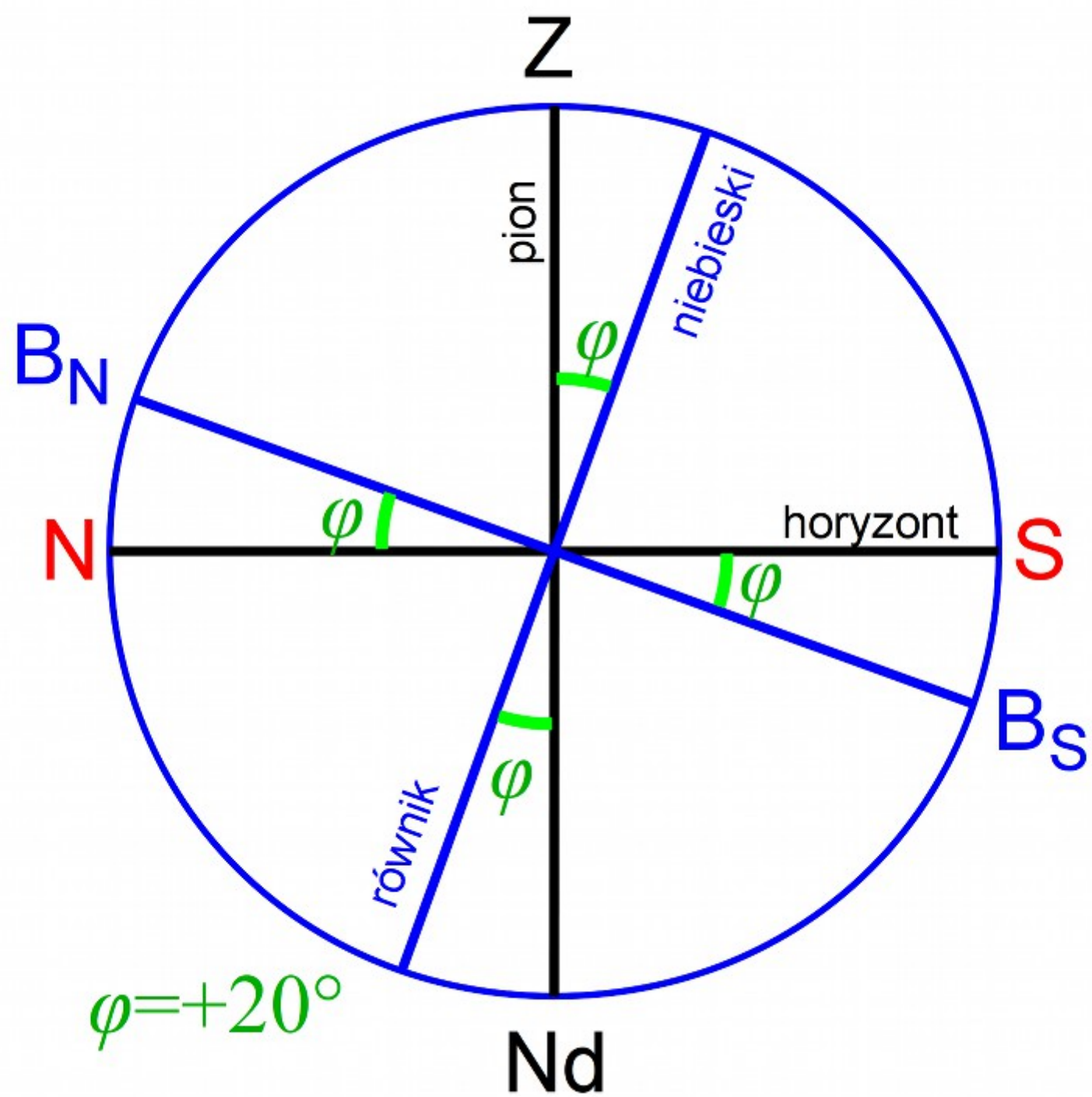


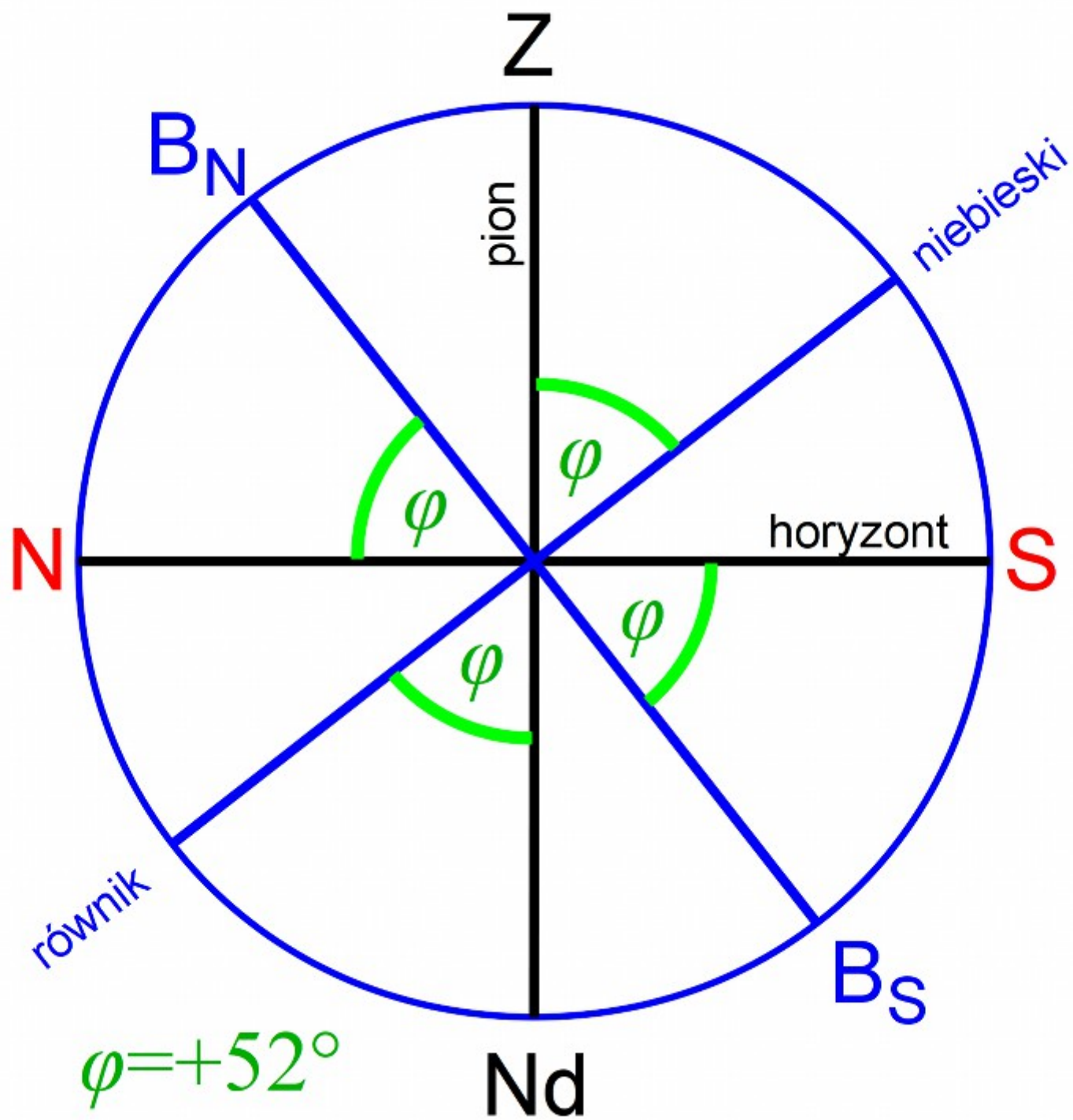
Na biegunie północnym...



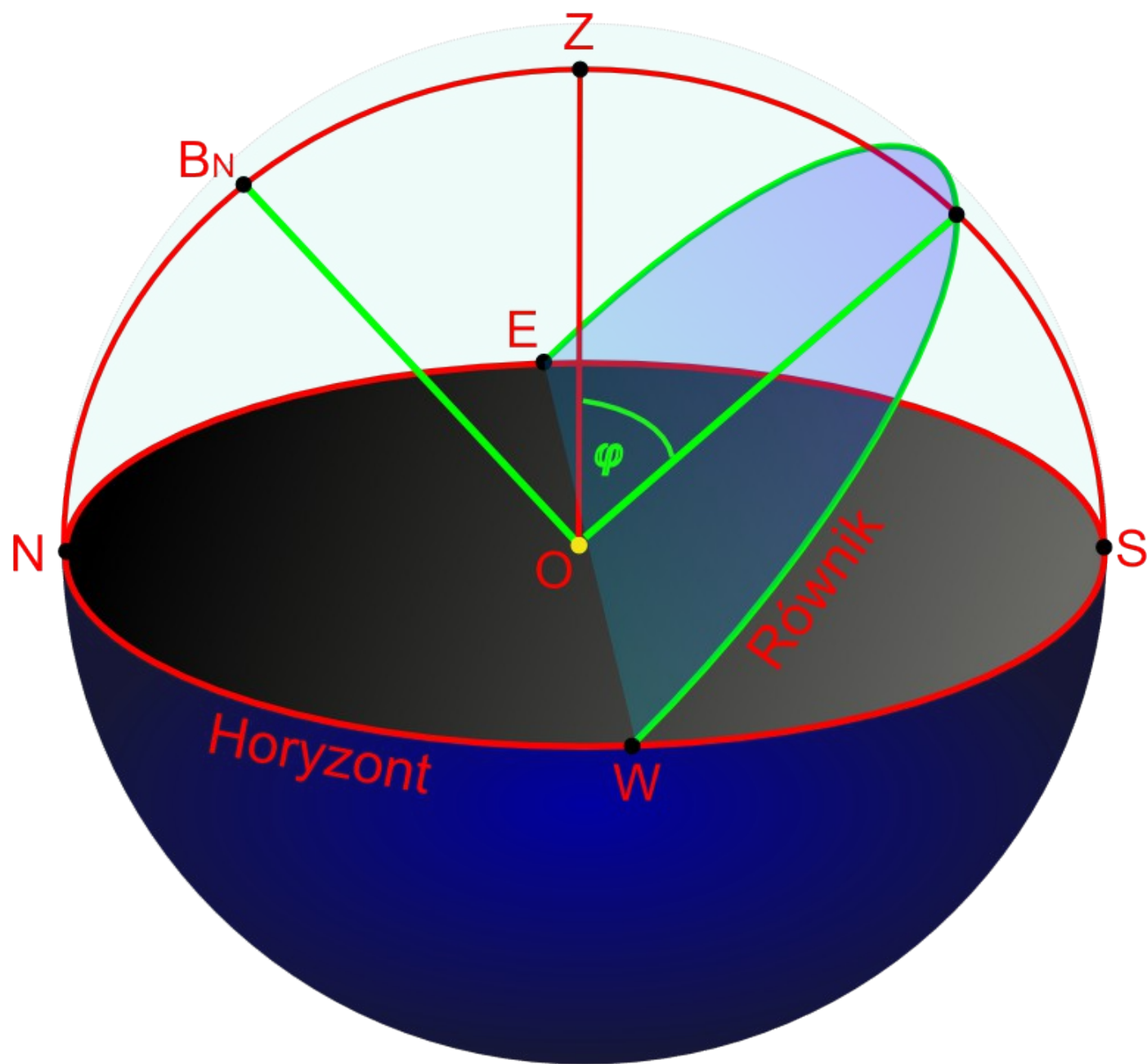
Na równiku ...

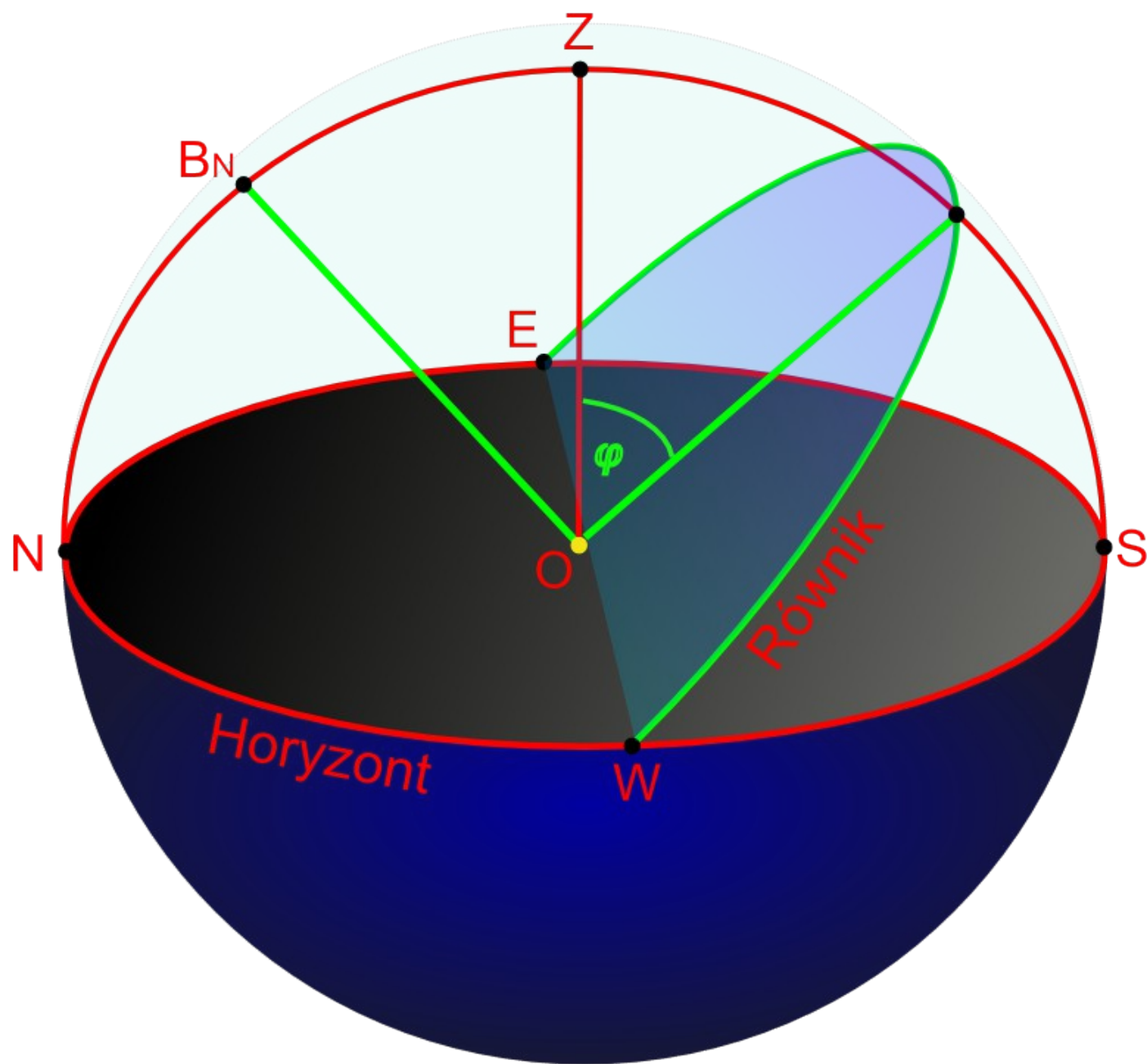




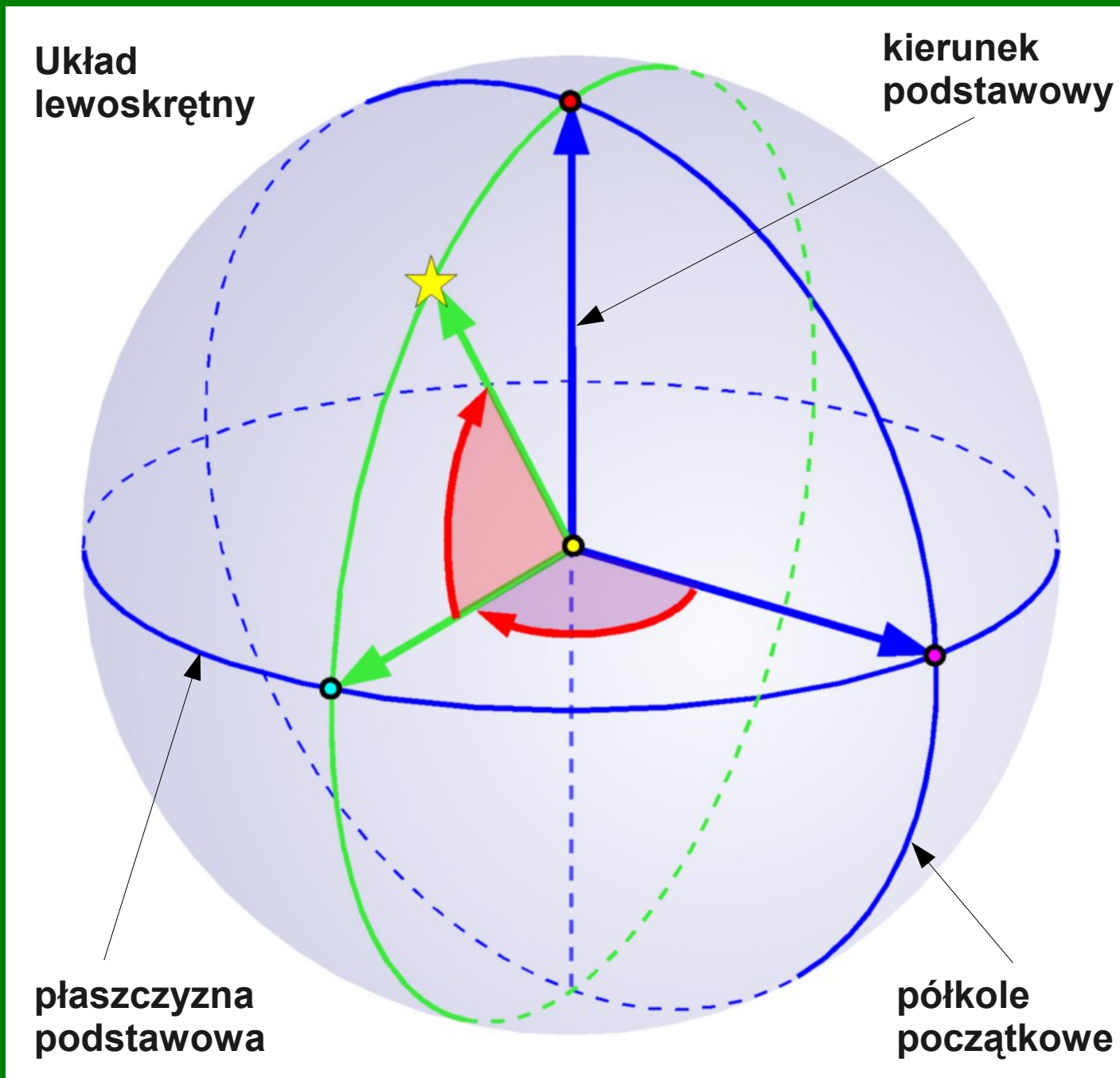


Górowanie i dołowanie a szerokość geograficzna obserwatora

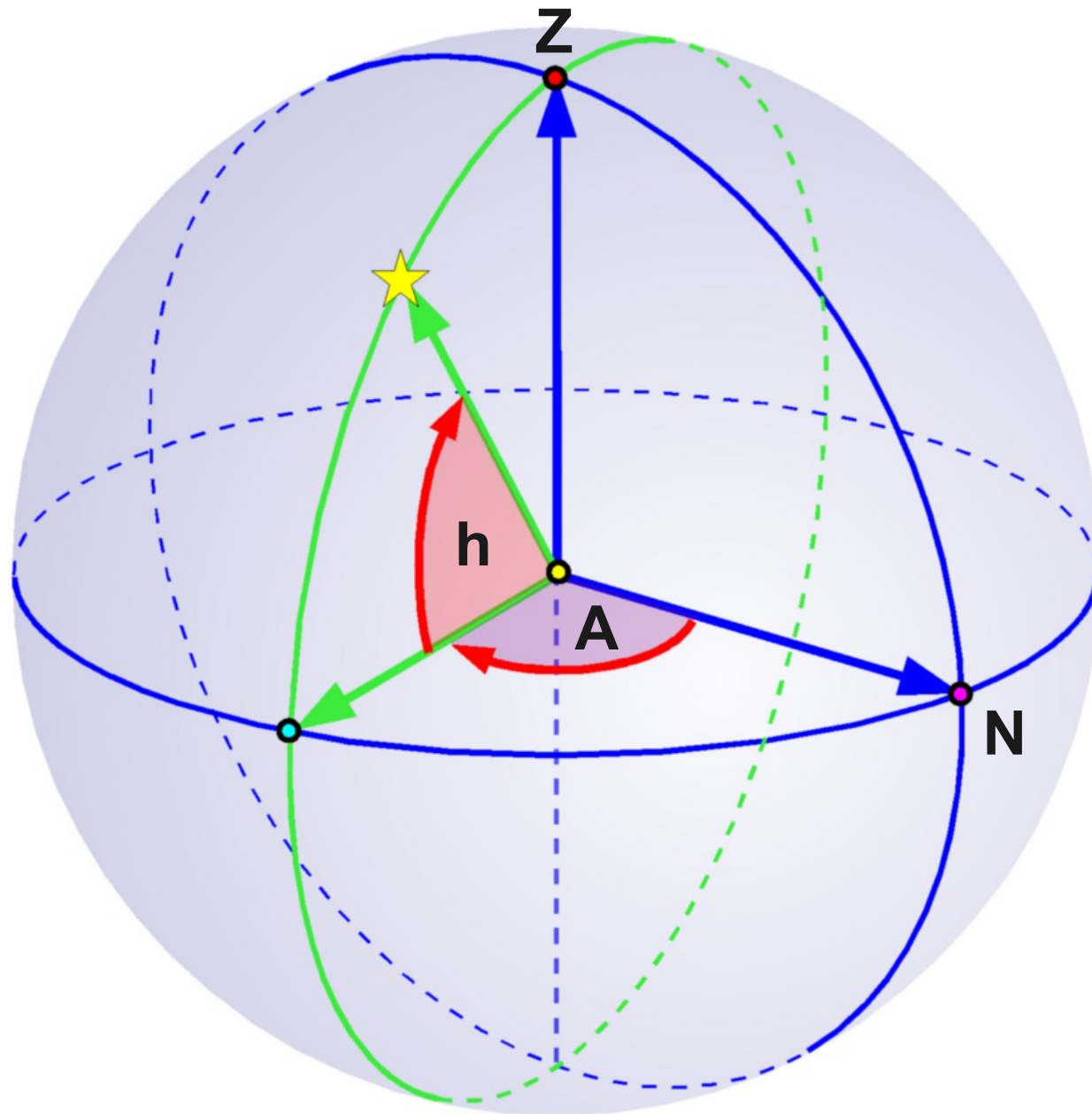




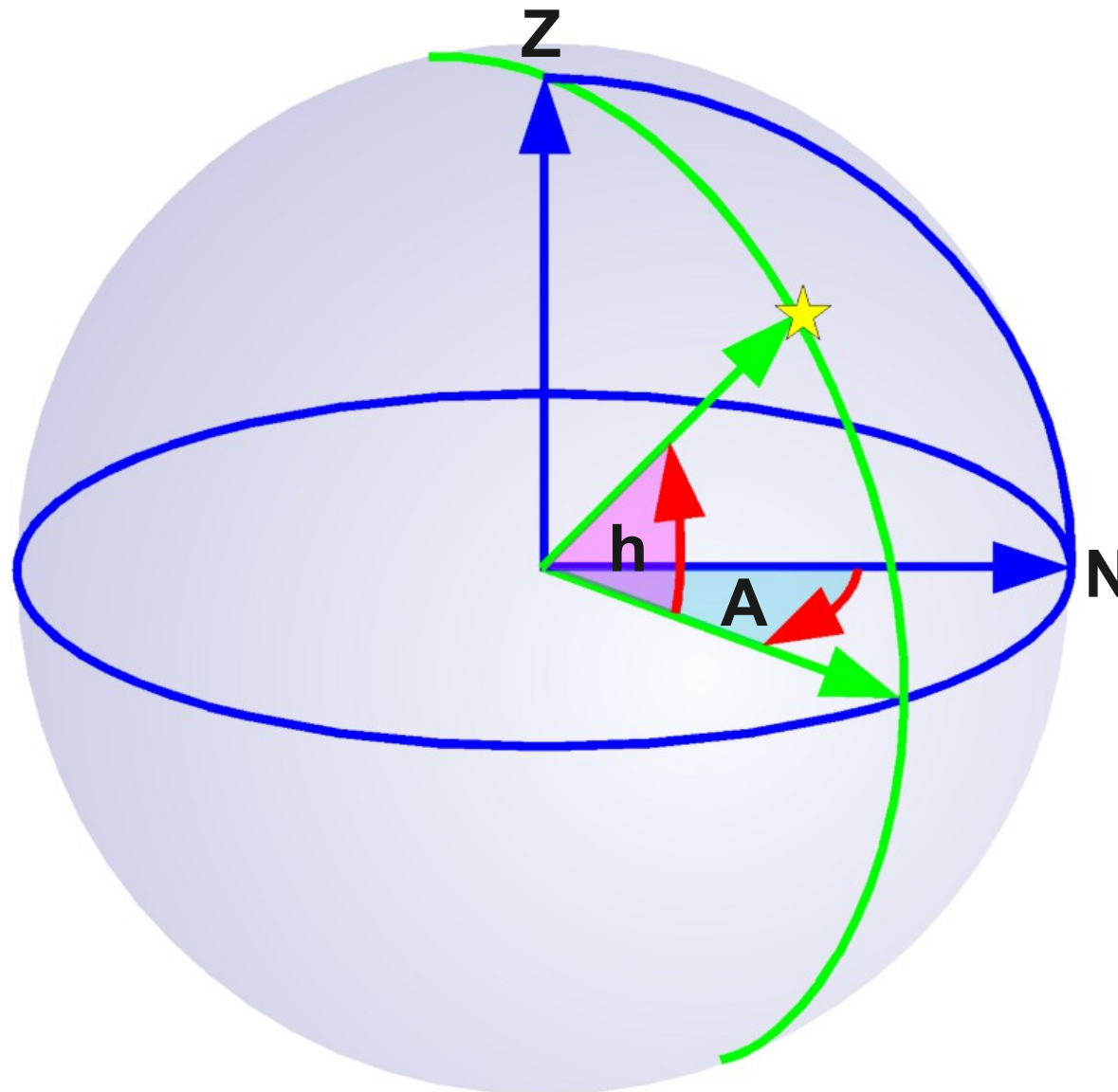
Współrzędne sferyczne



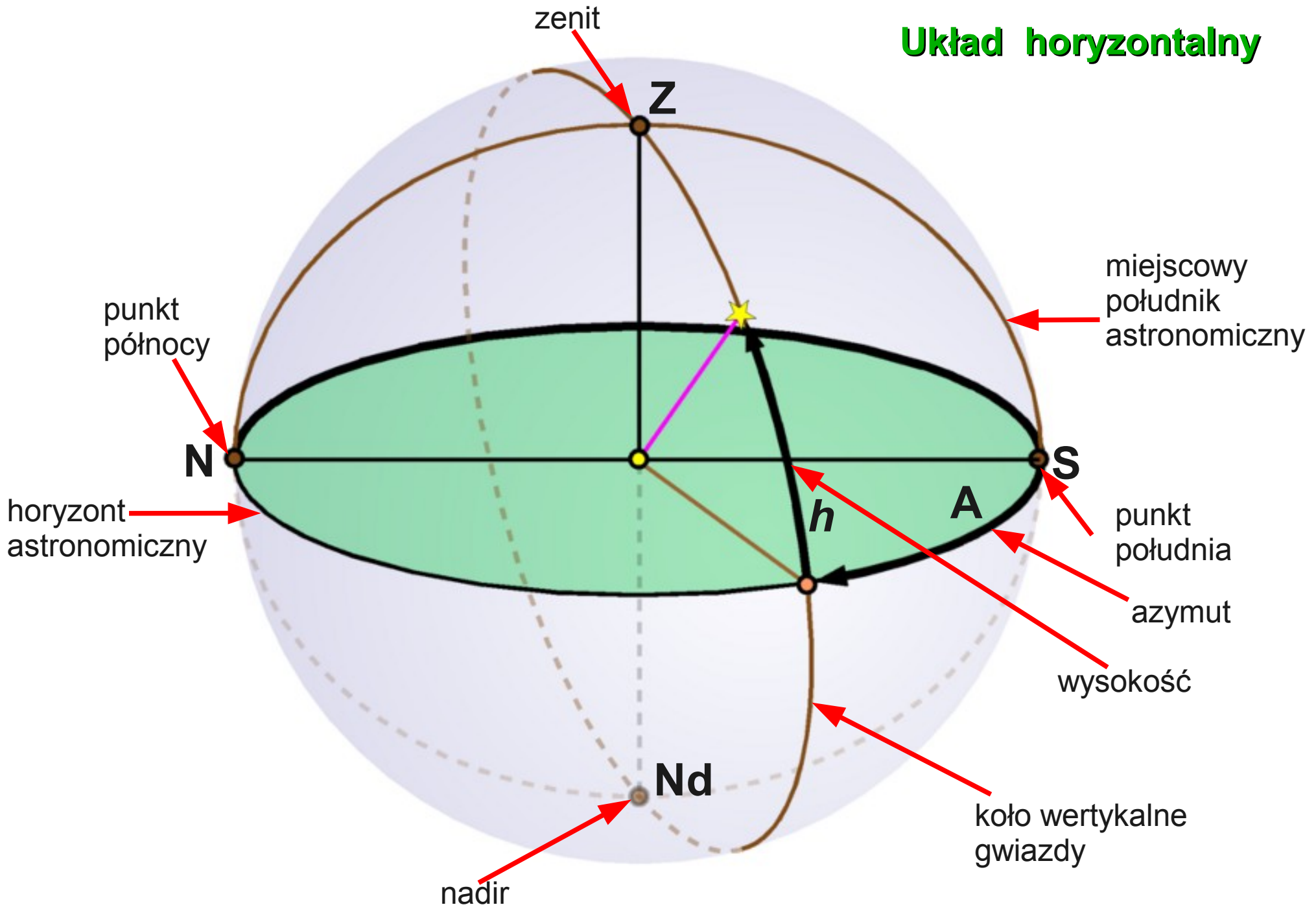
Układ horyzontalny



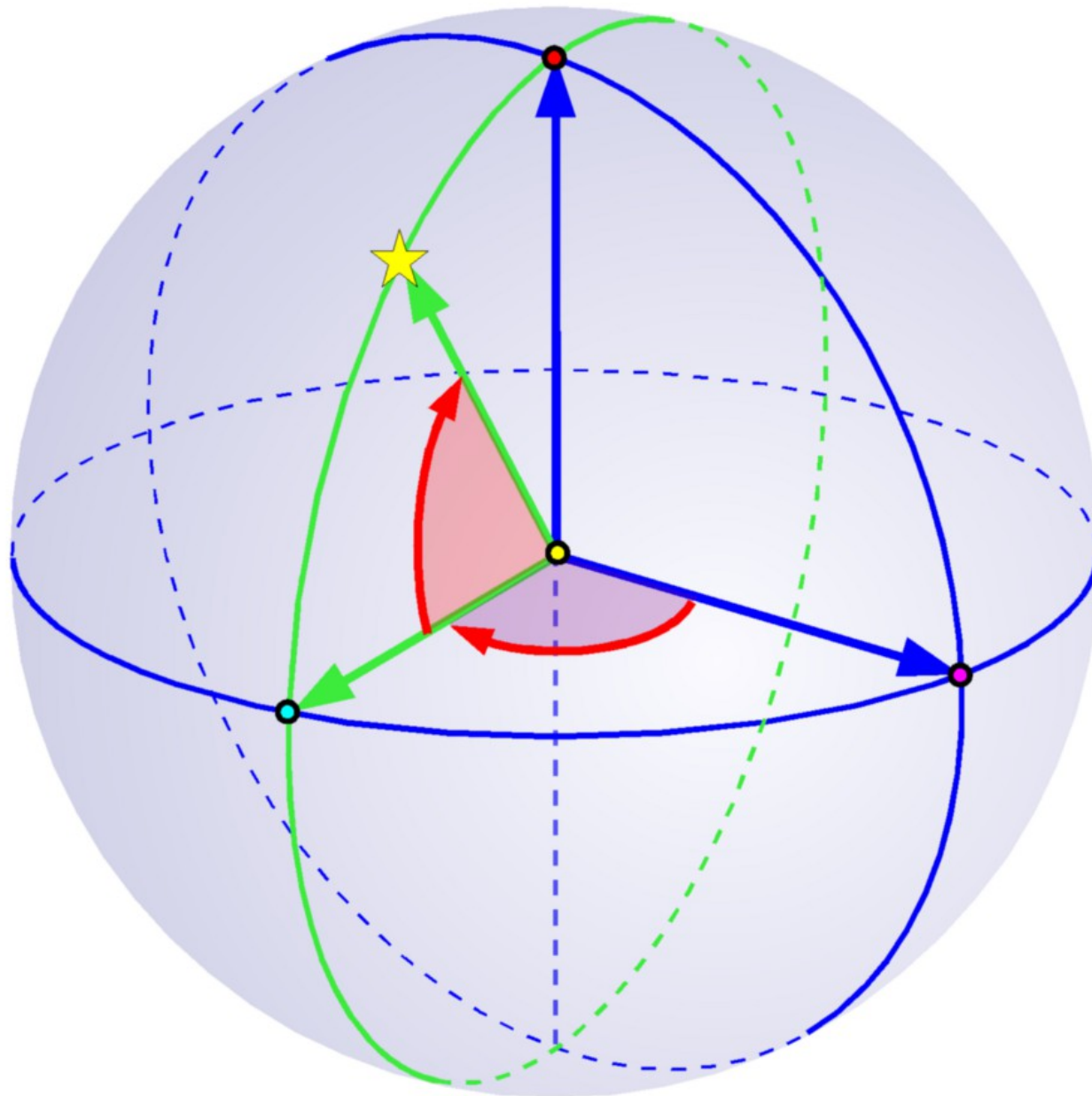
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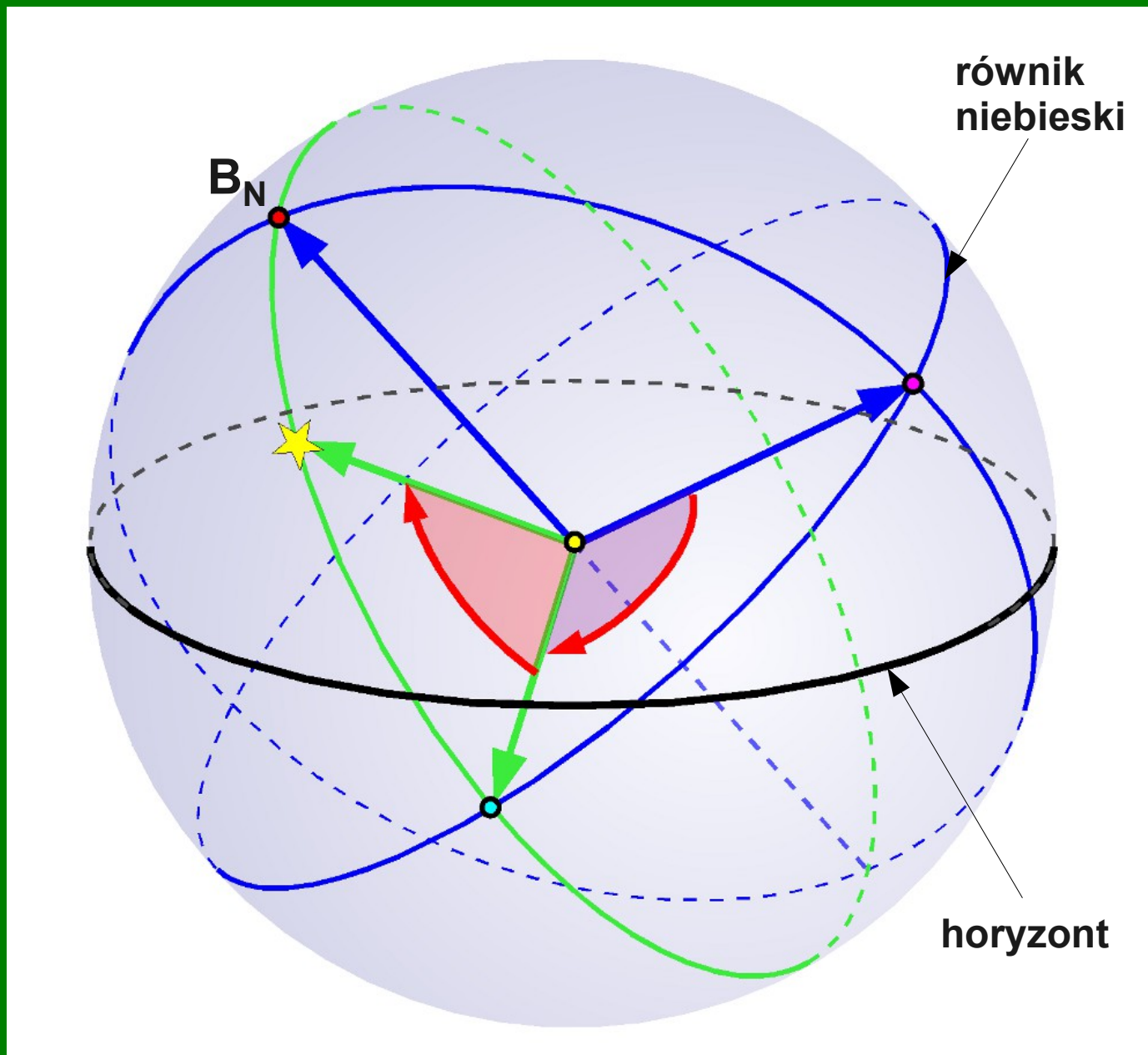
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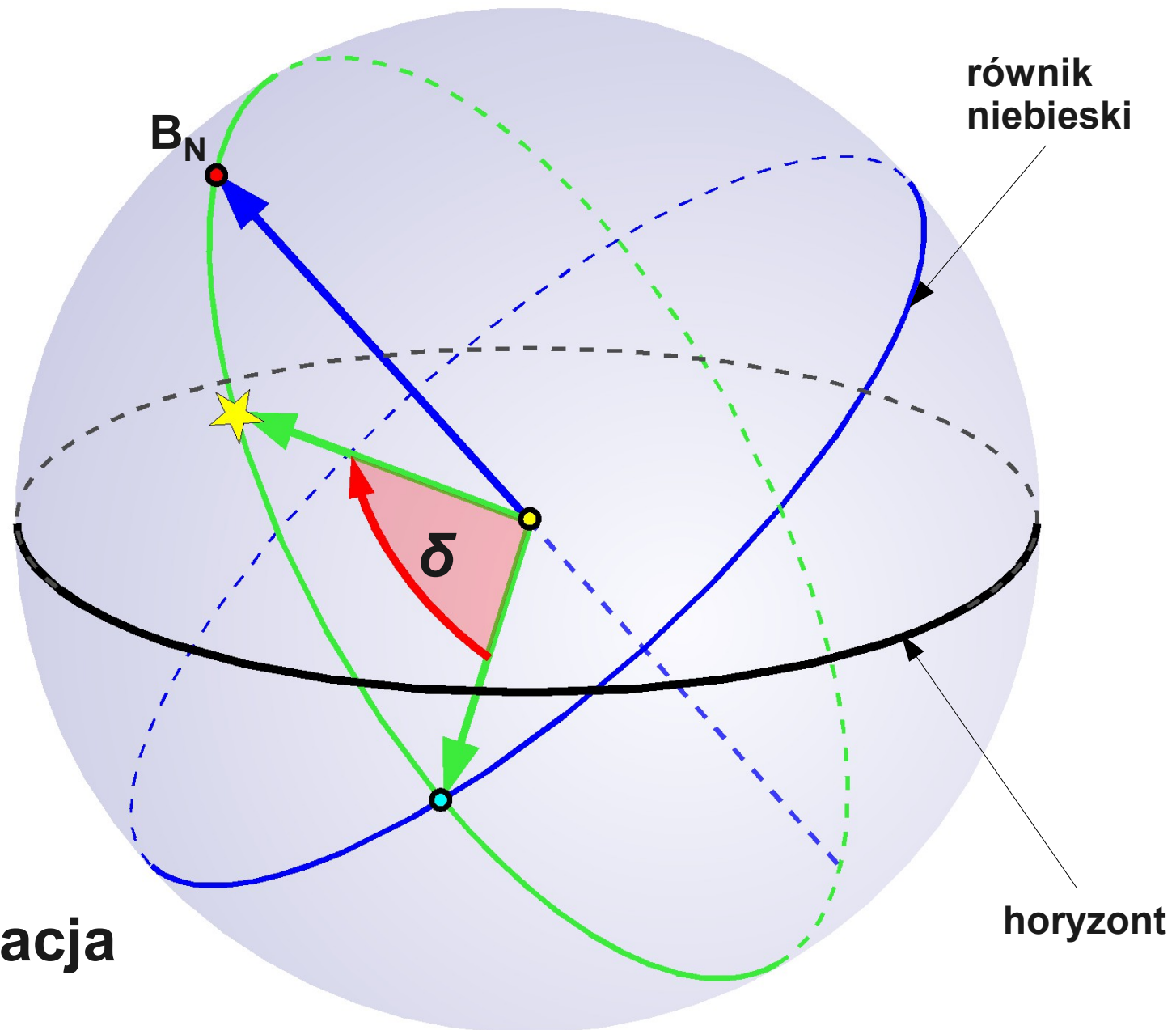
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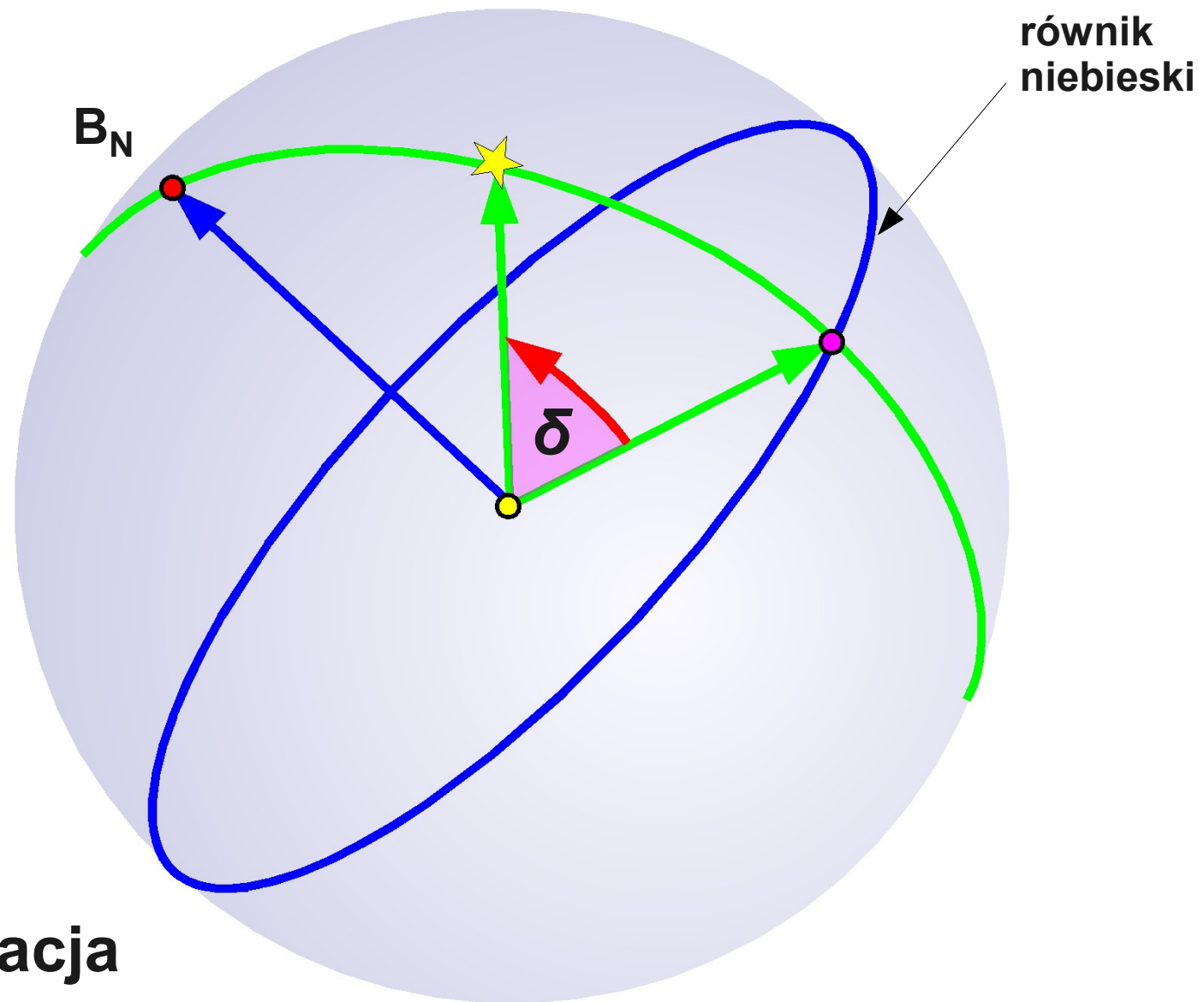
Współrzędne sferyczne



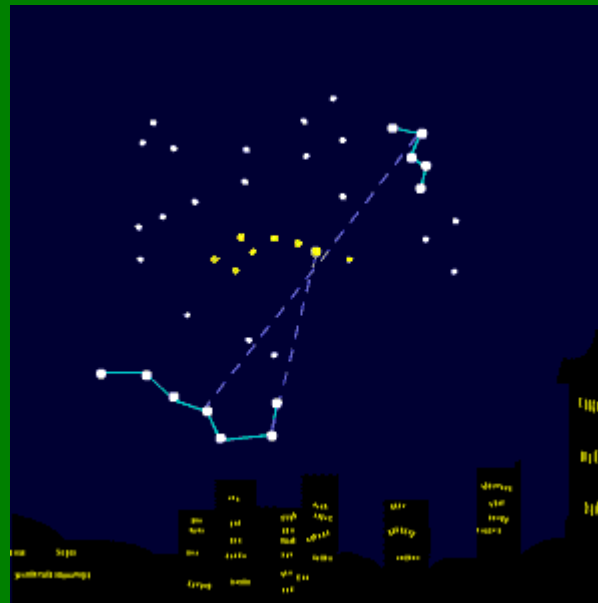
deklinacja



deklinacja



Ruch dobowy sfery niebieskiej



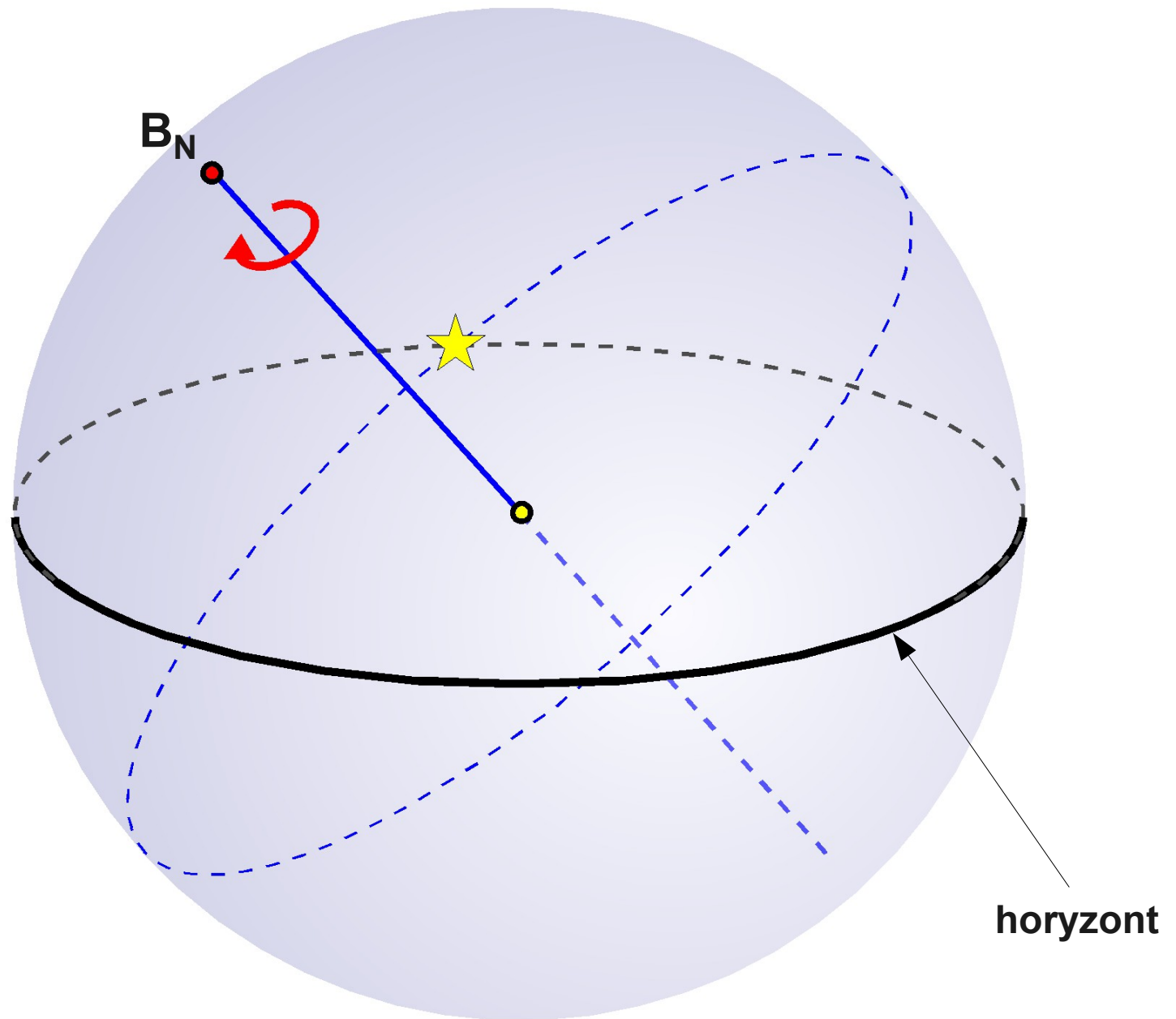
by Mjchael

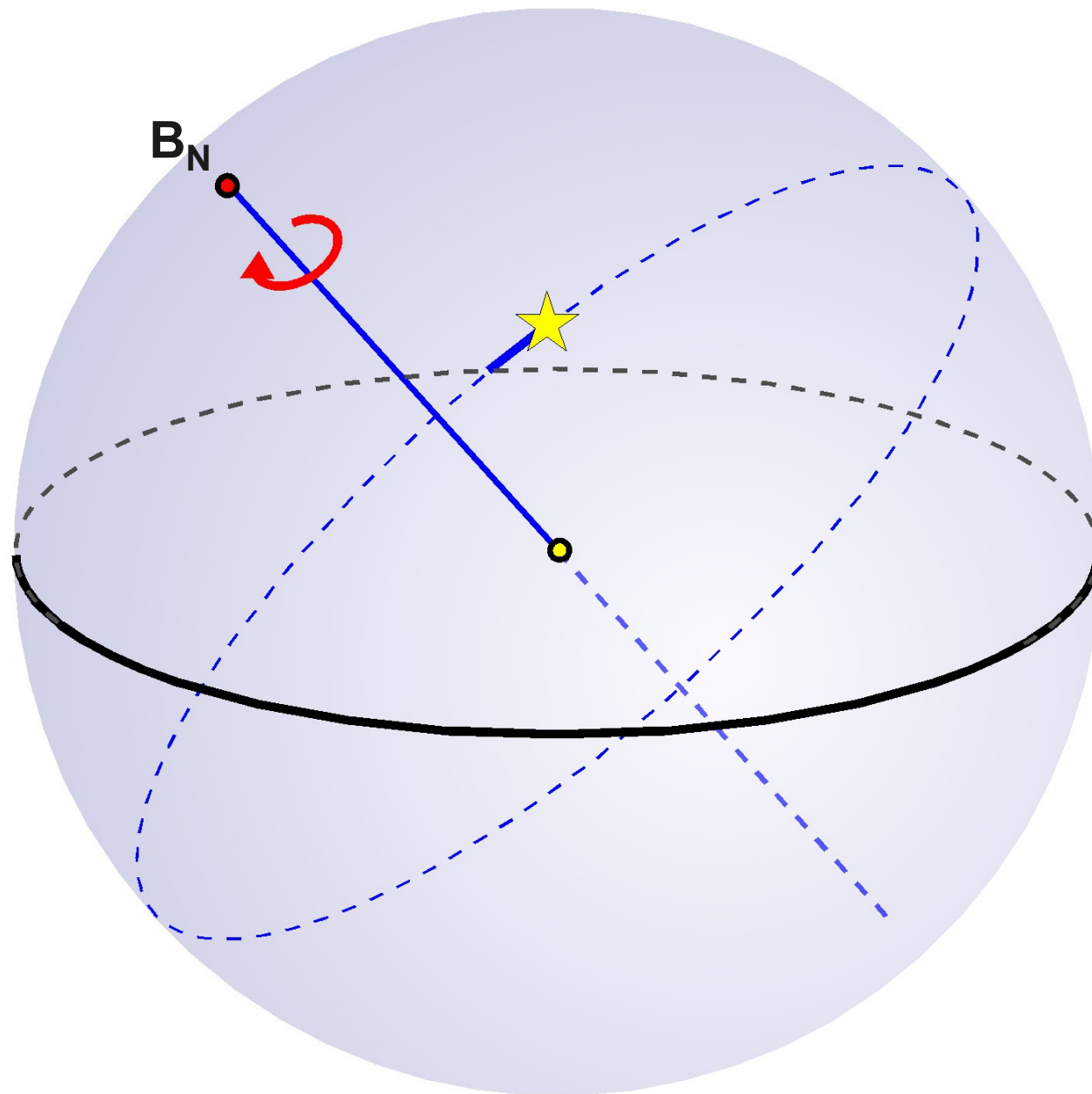


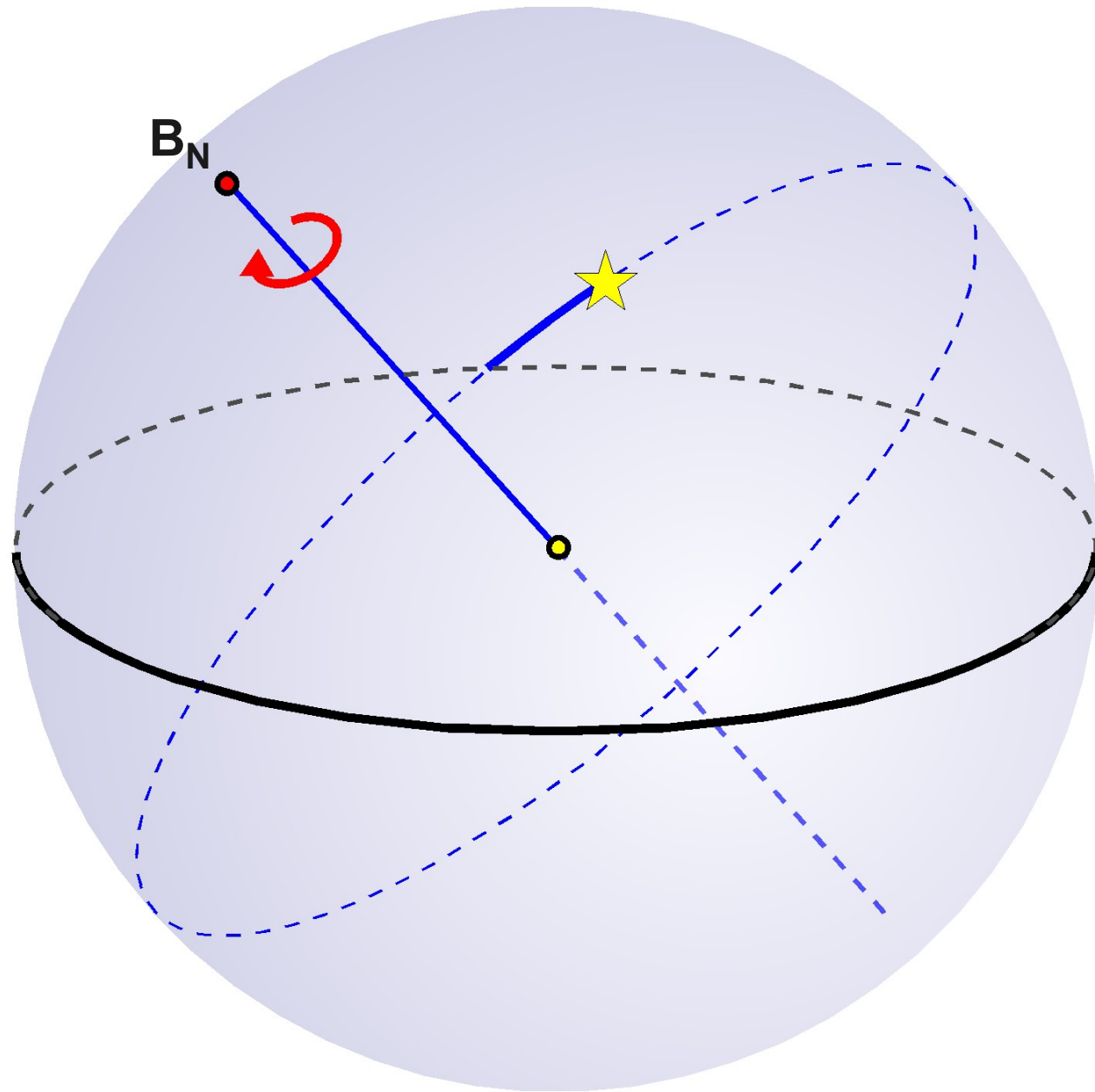
Photo by: Selim S.

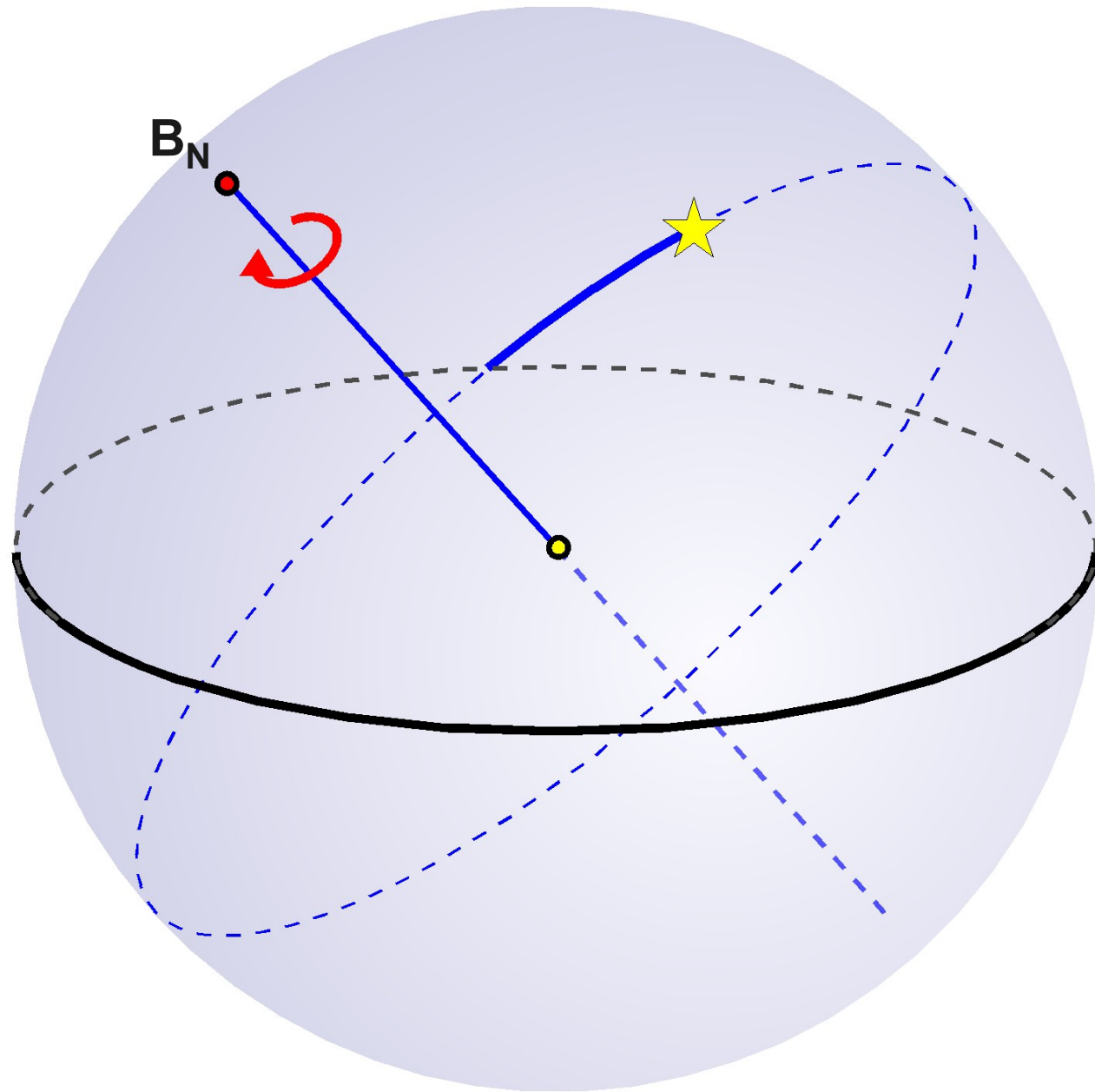


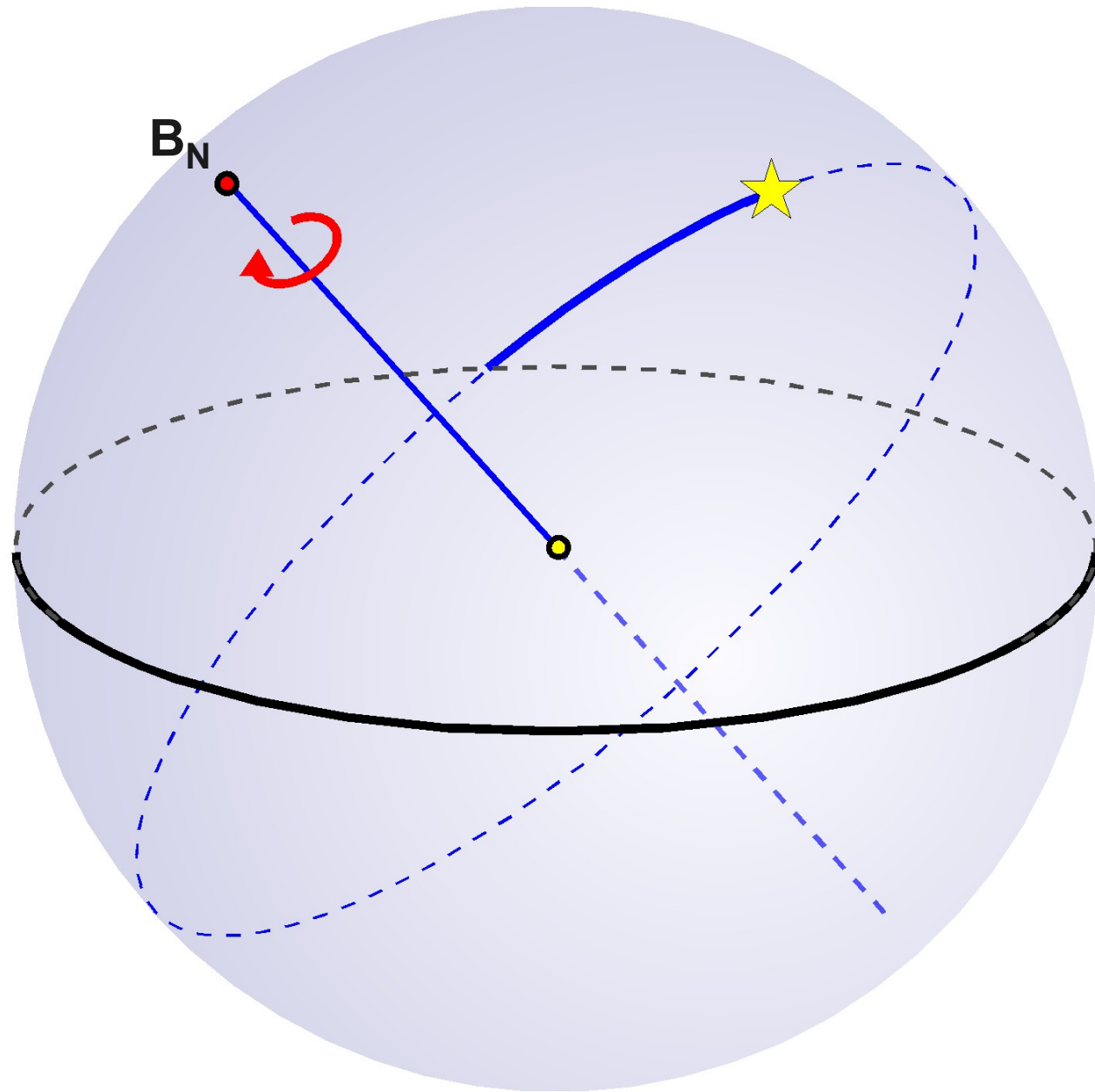
Mt Hamilton, Lick Observatory, by Ikluft

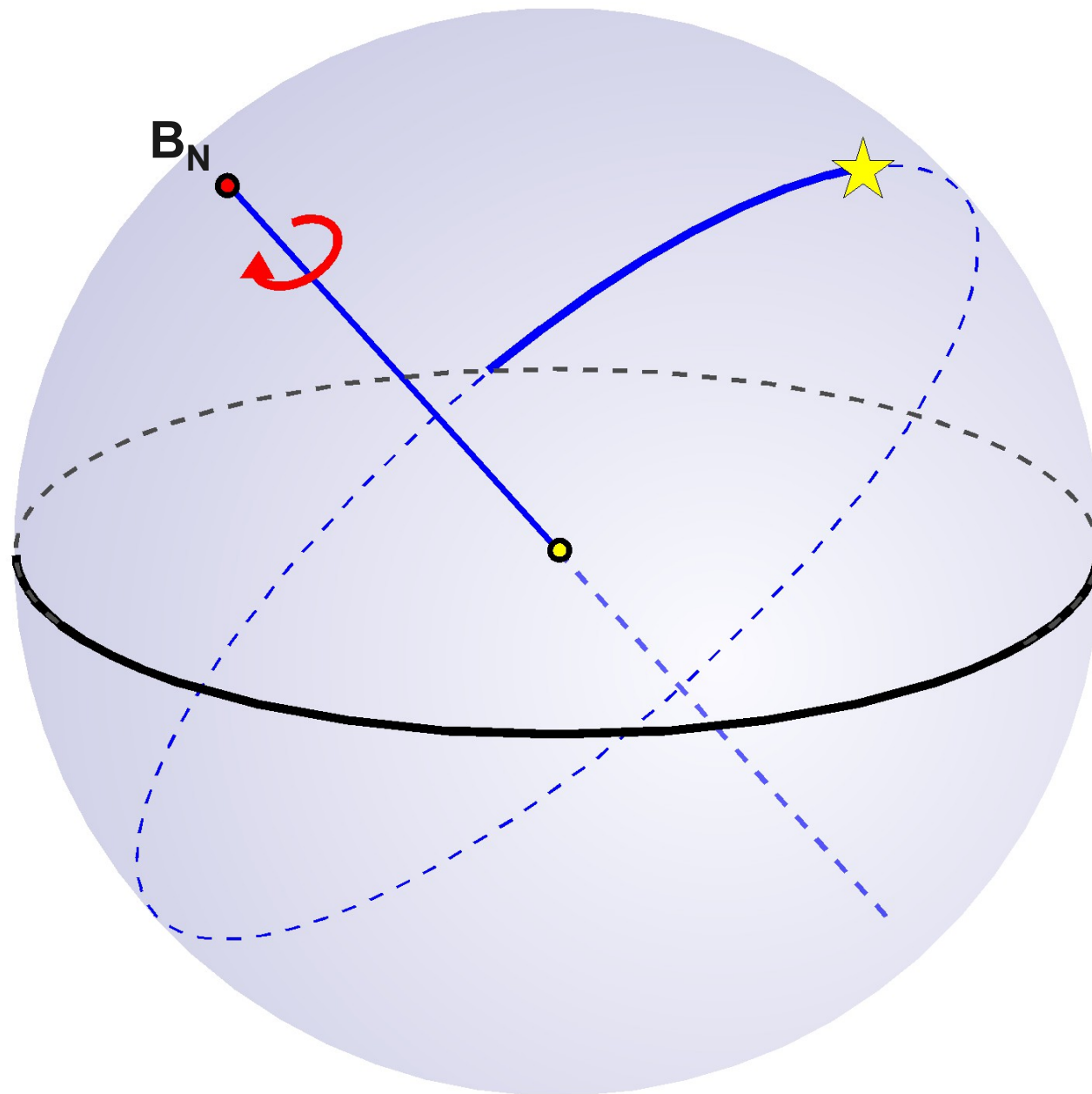


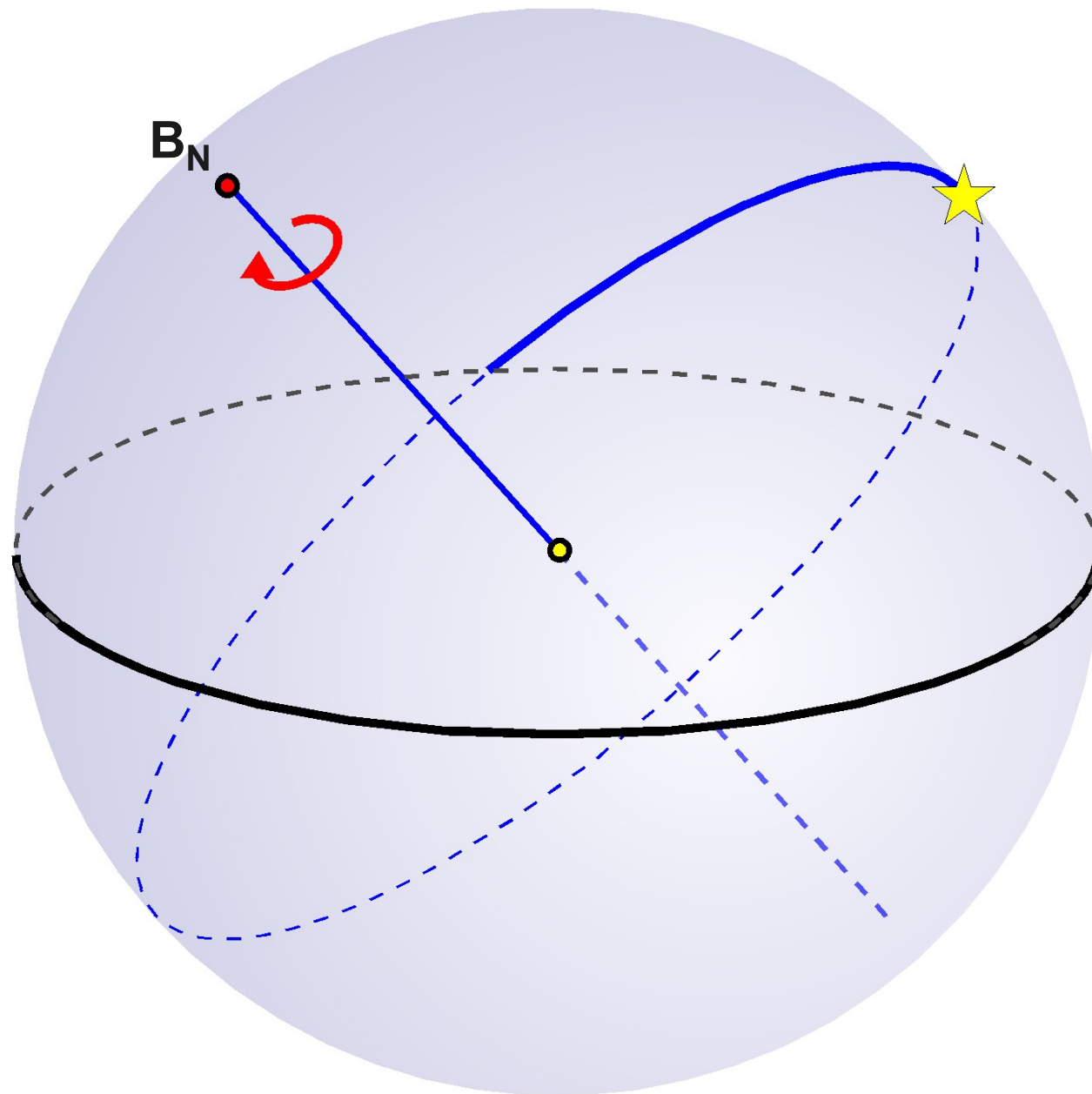


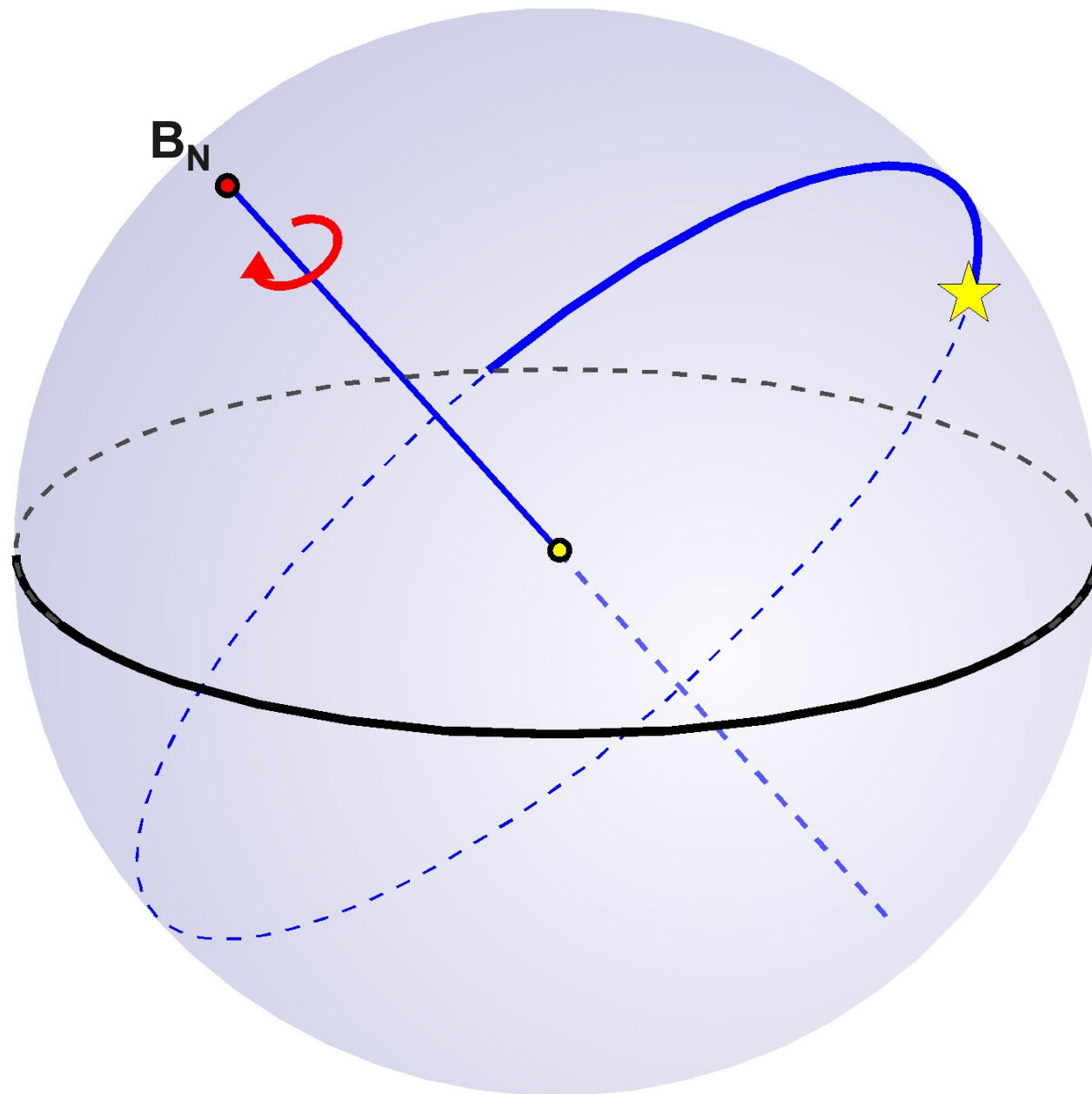


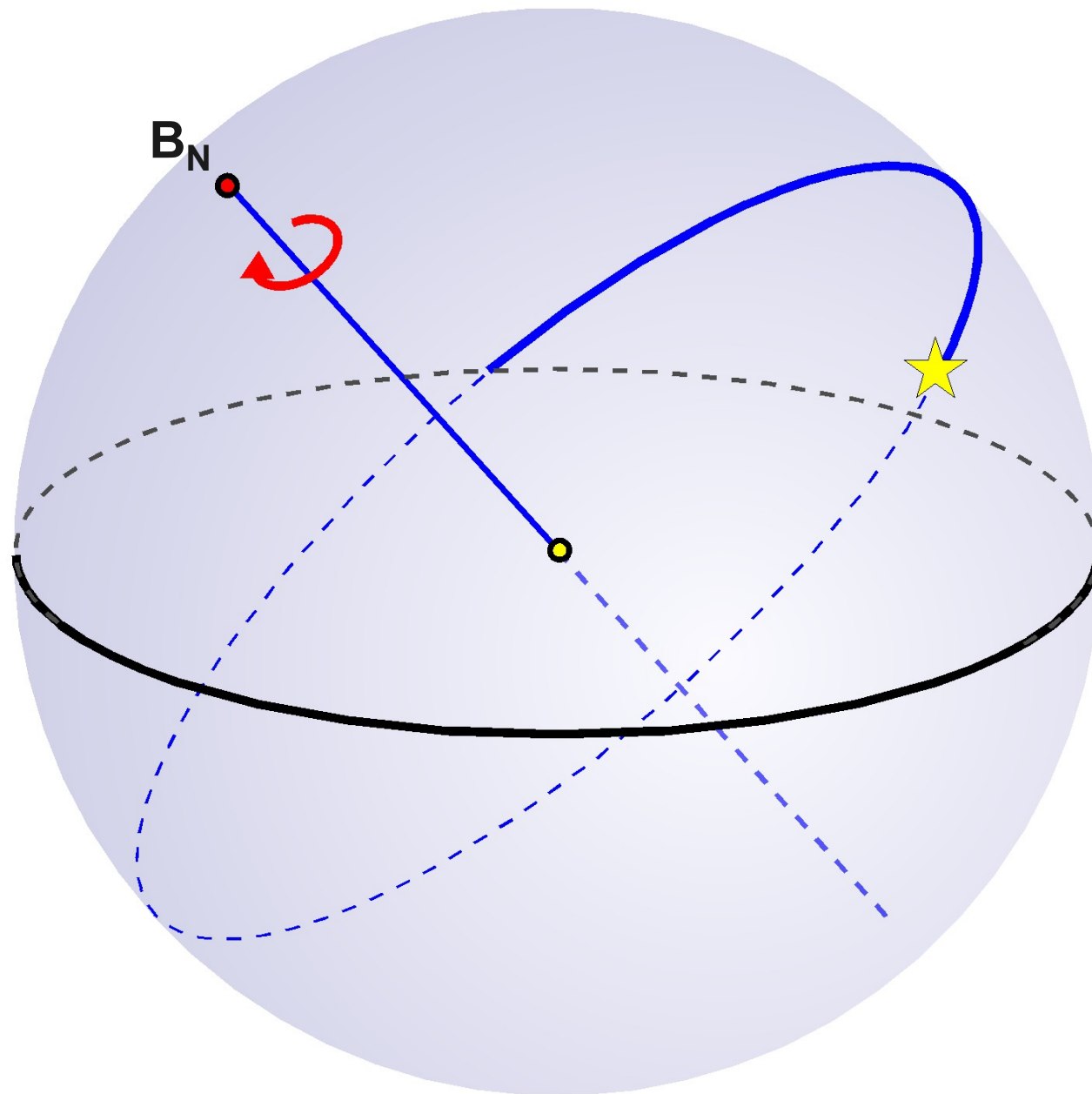


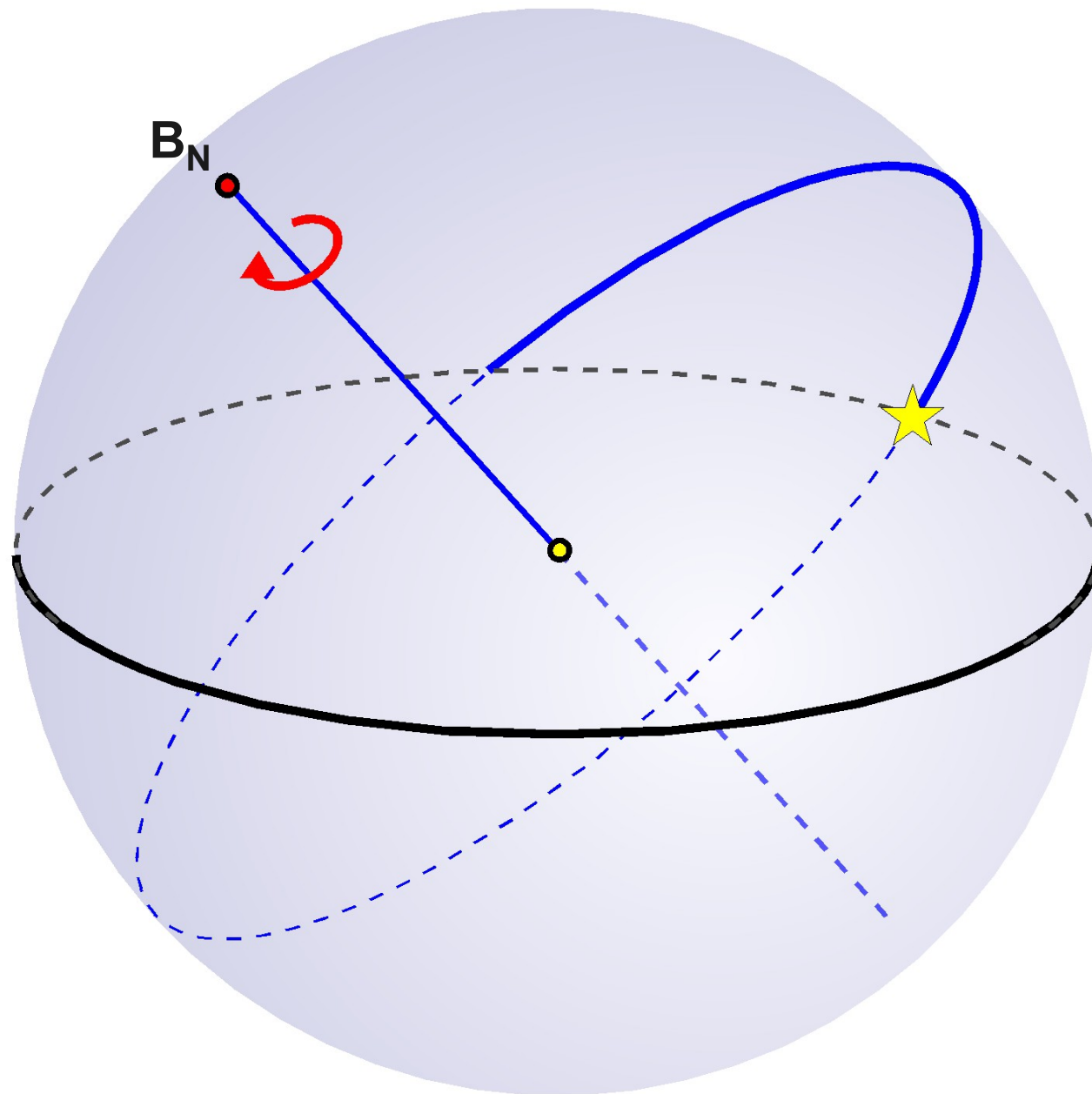


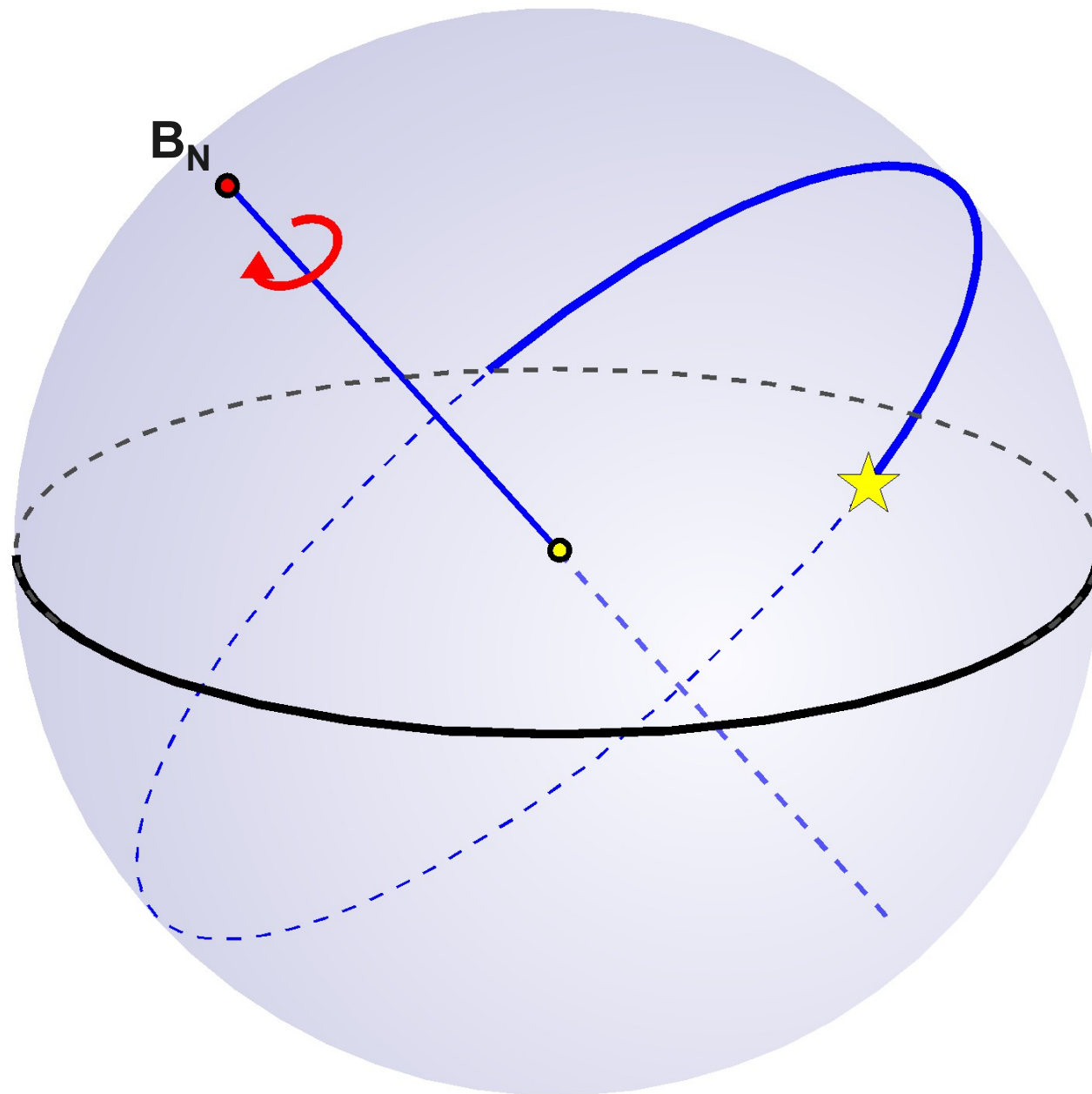


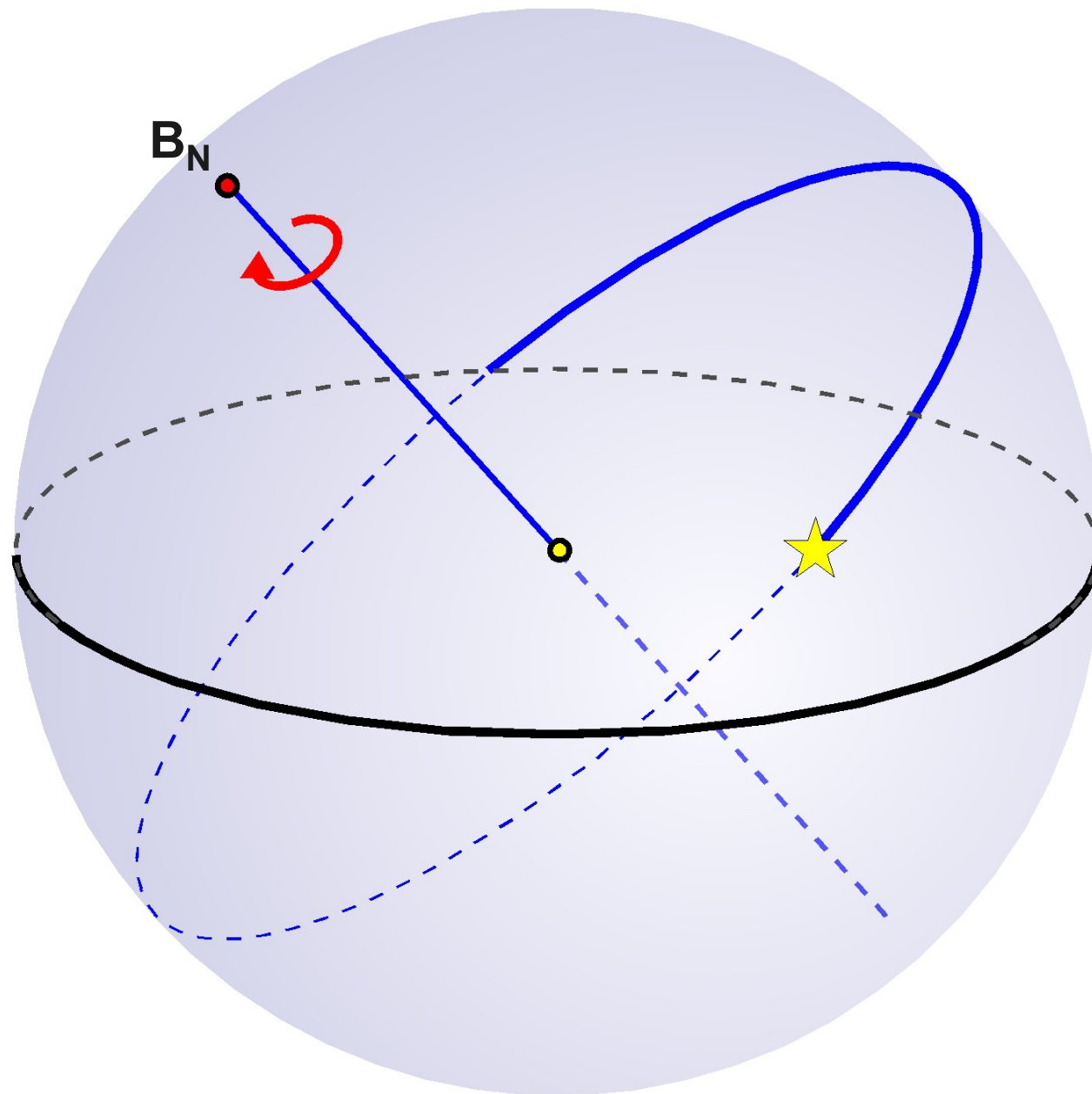


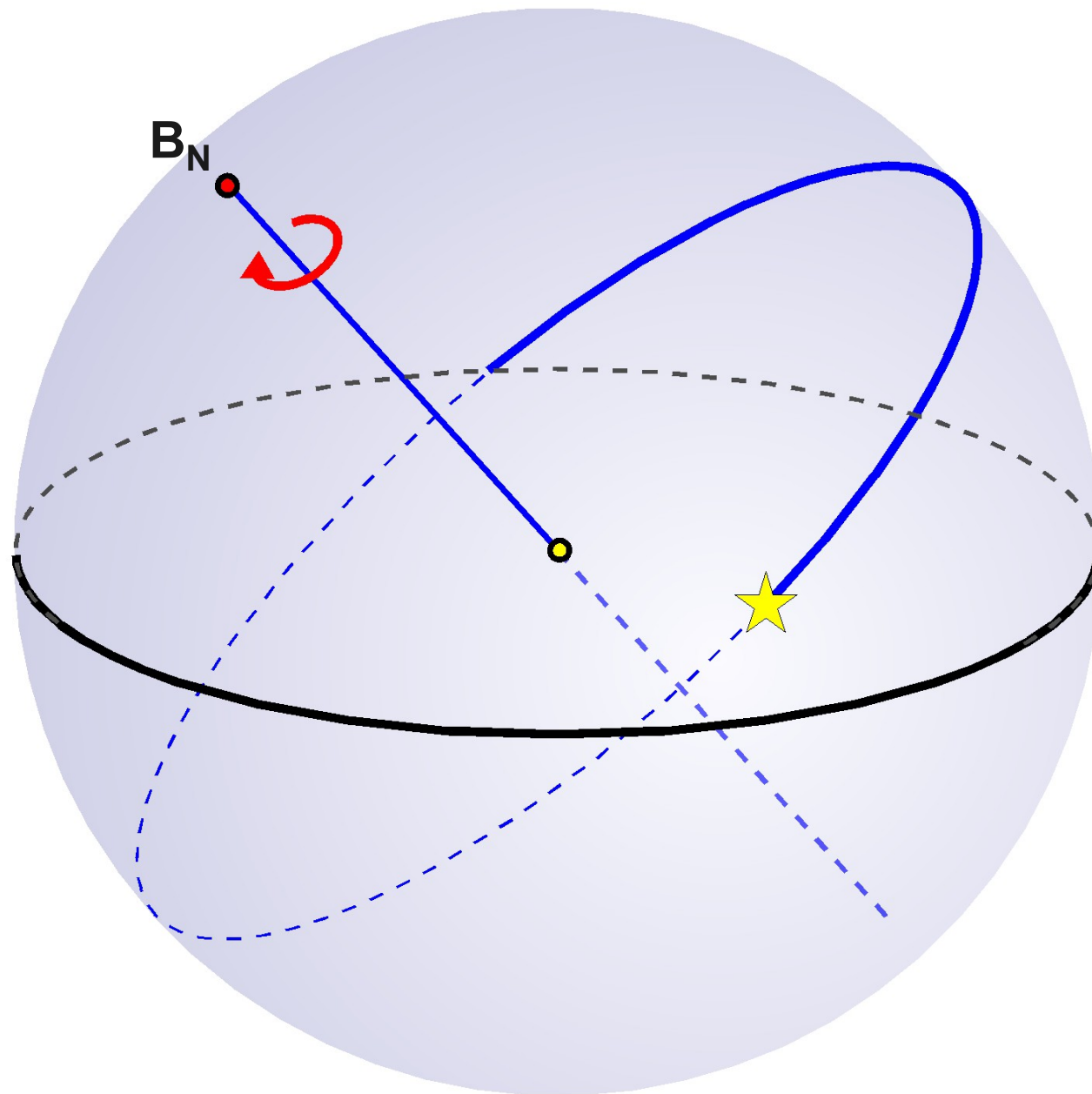


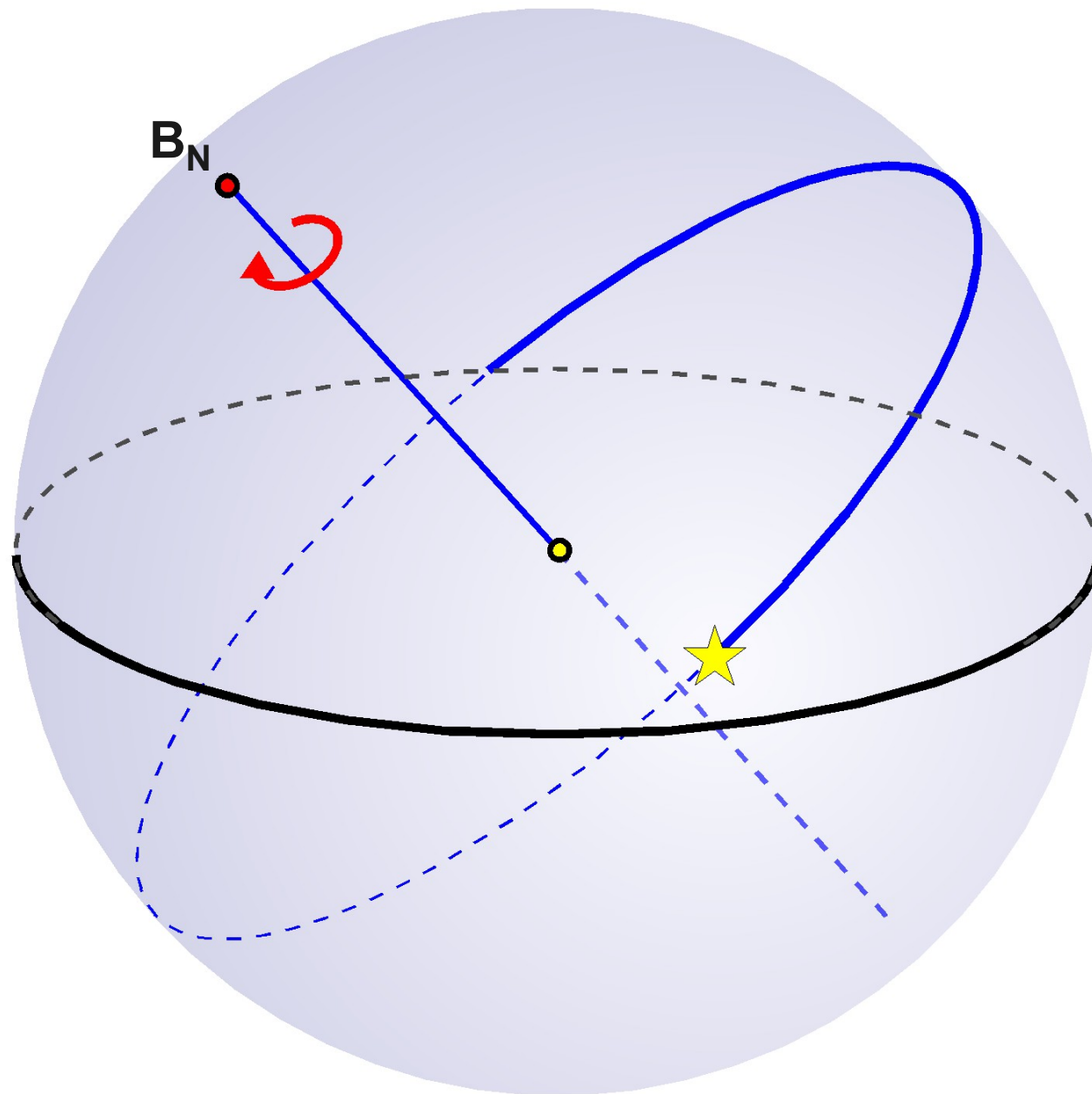


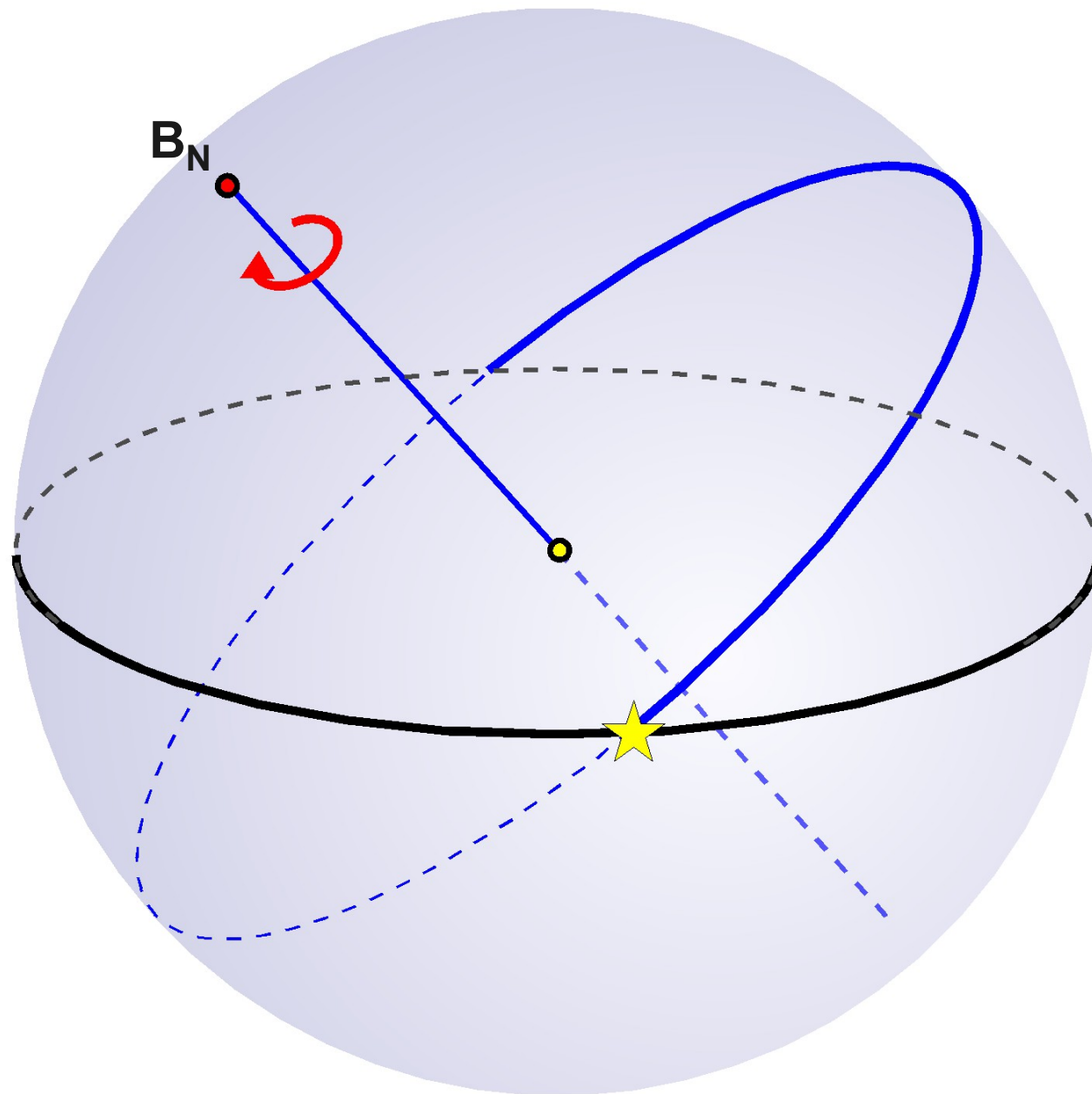


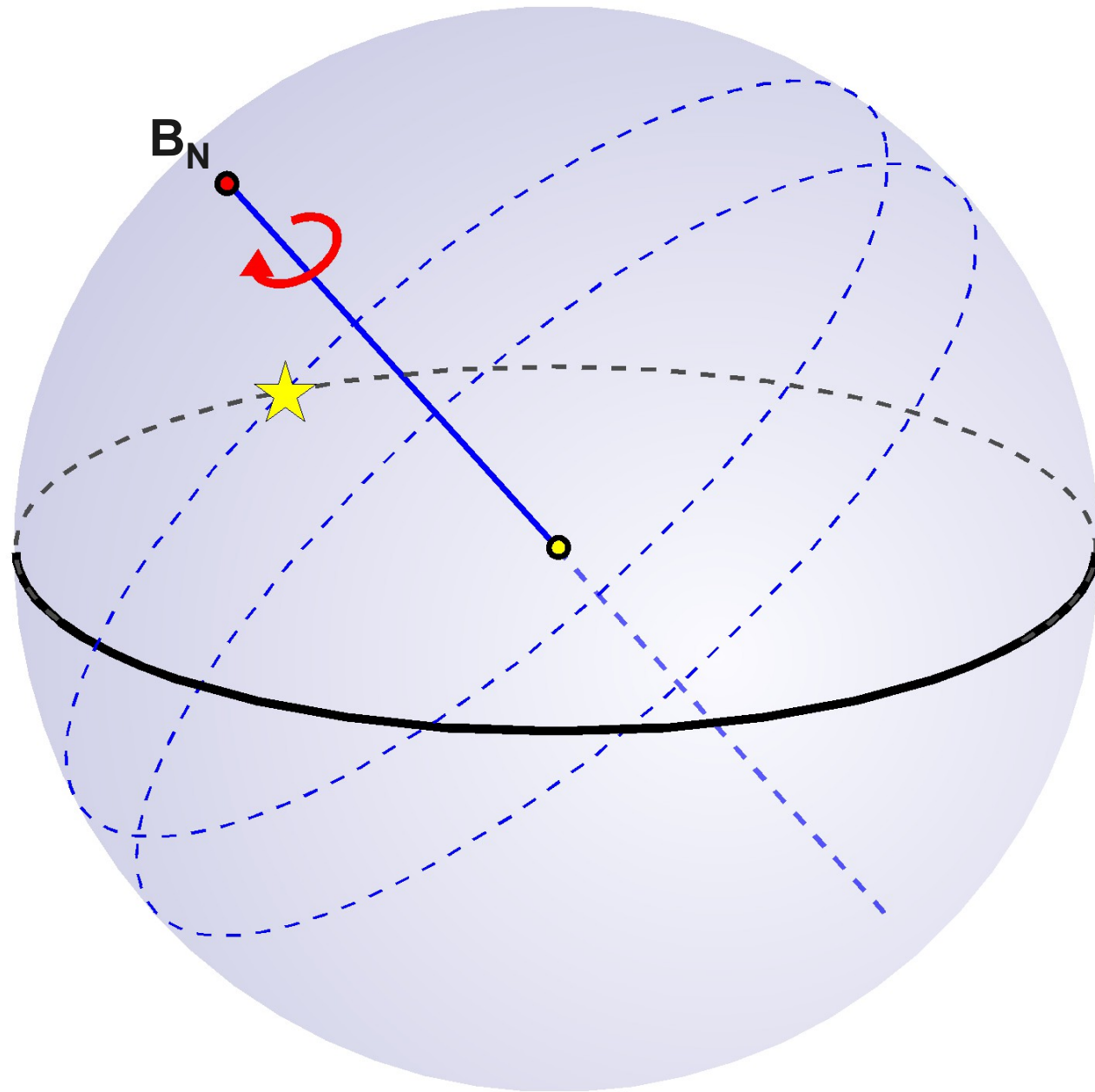


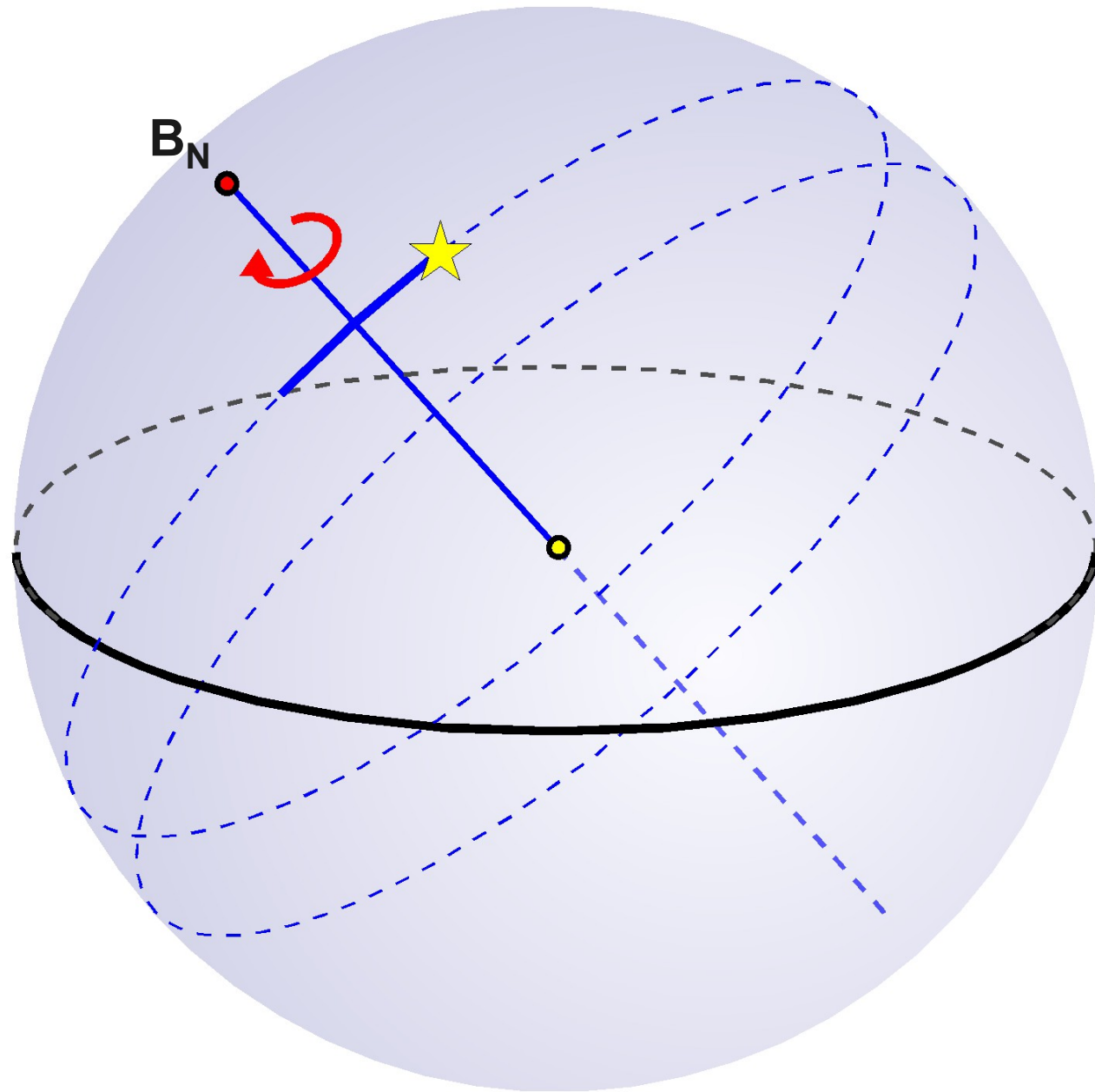


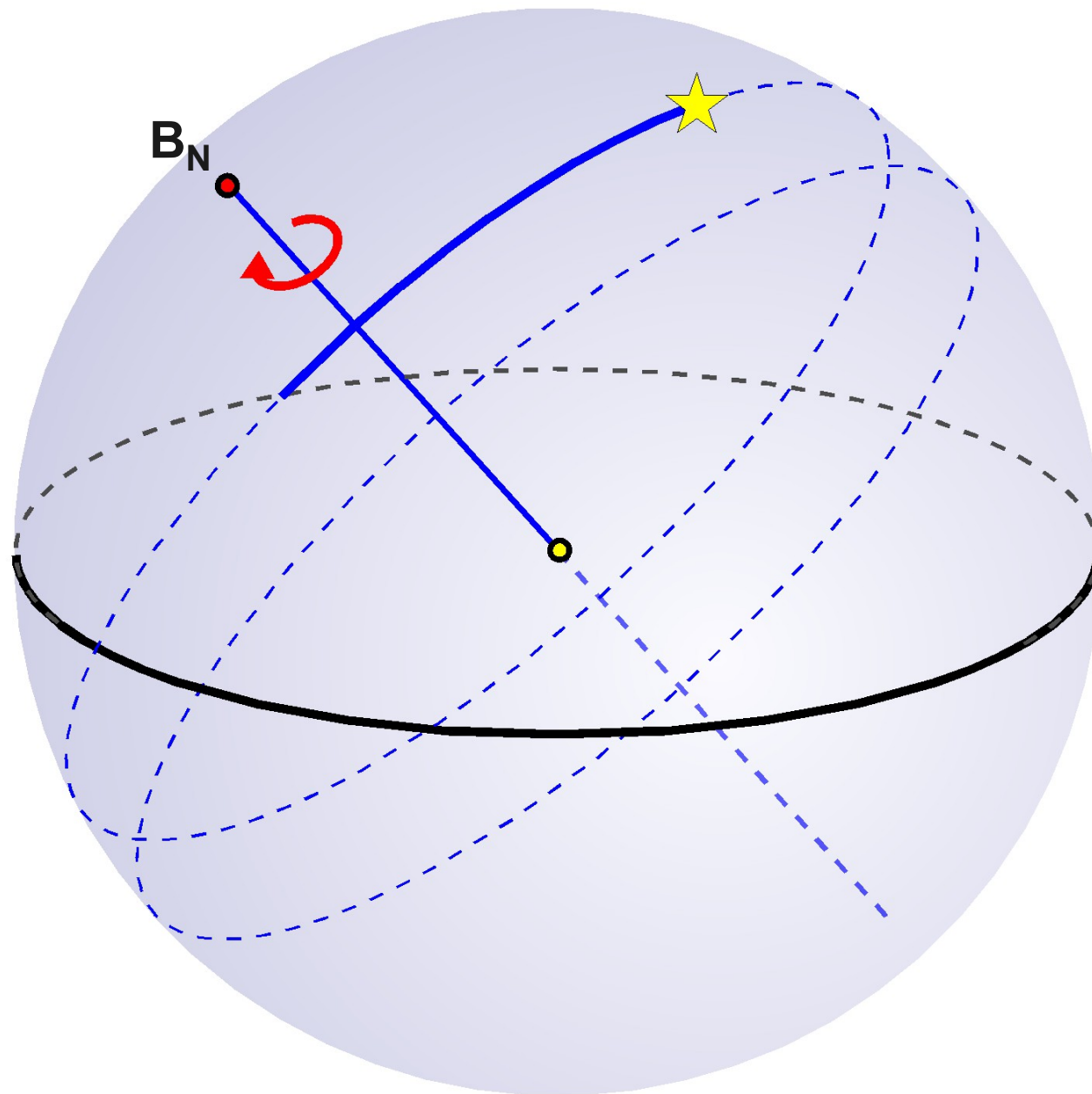


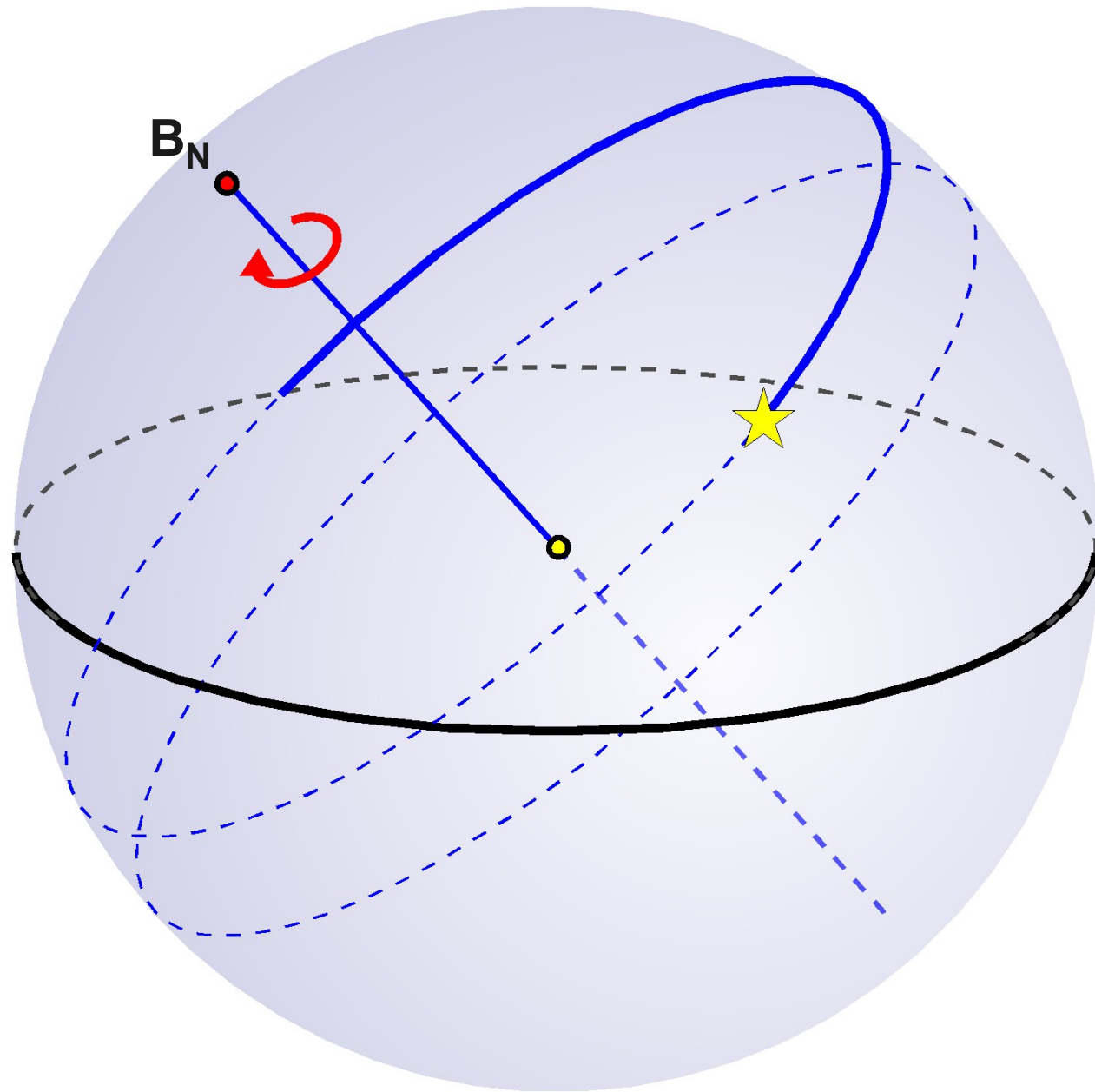


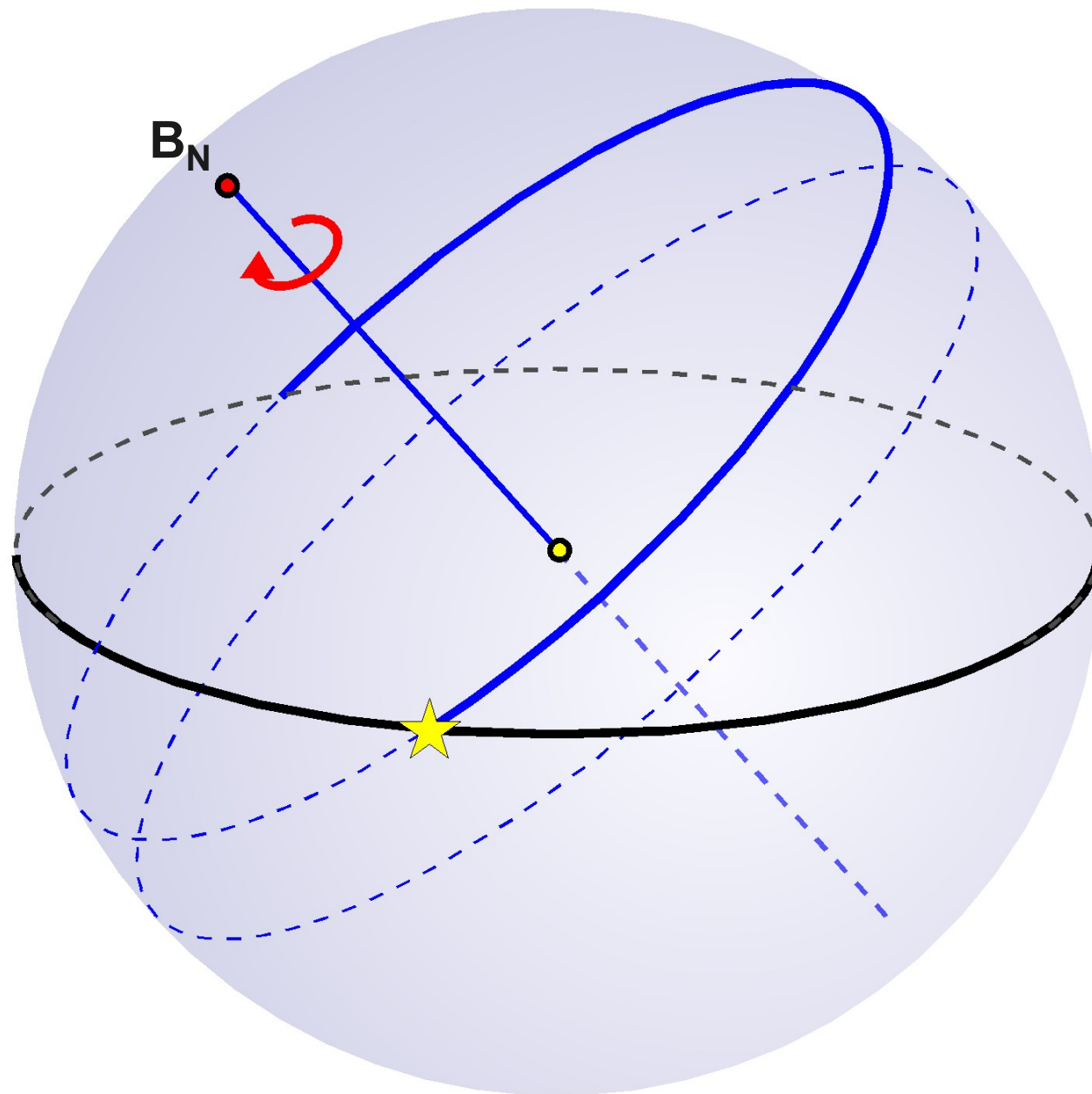


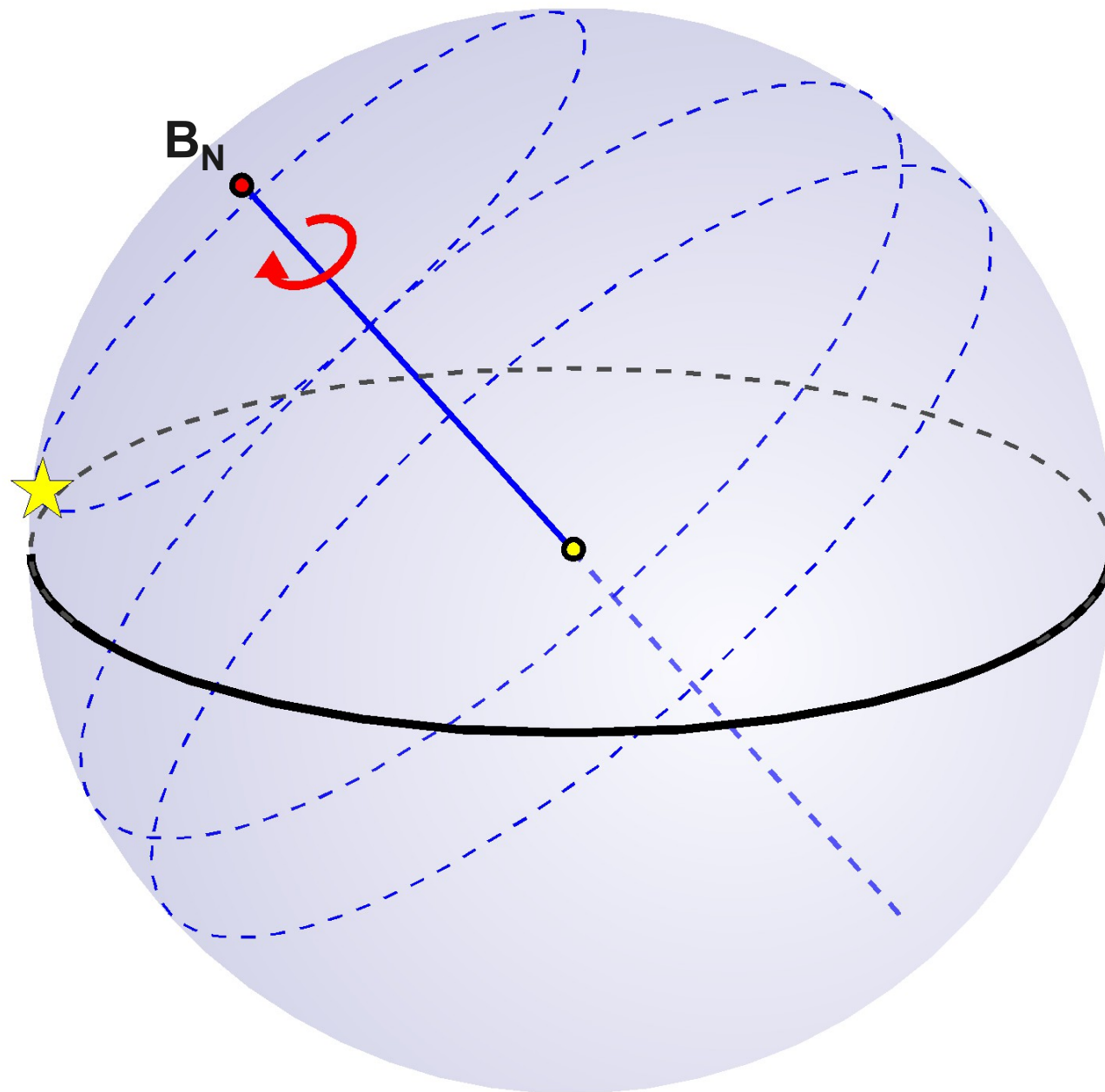


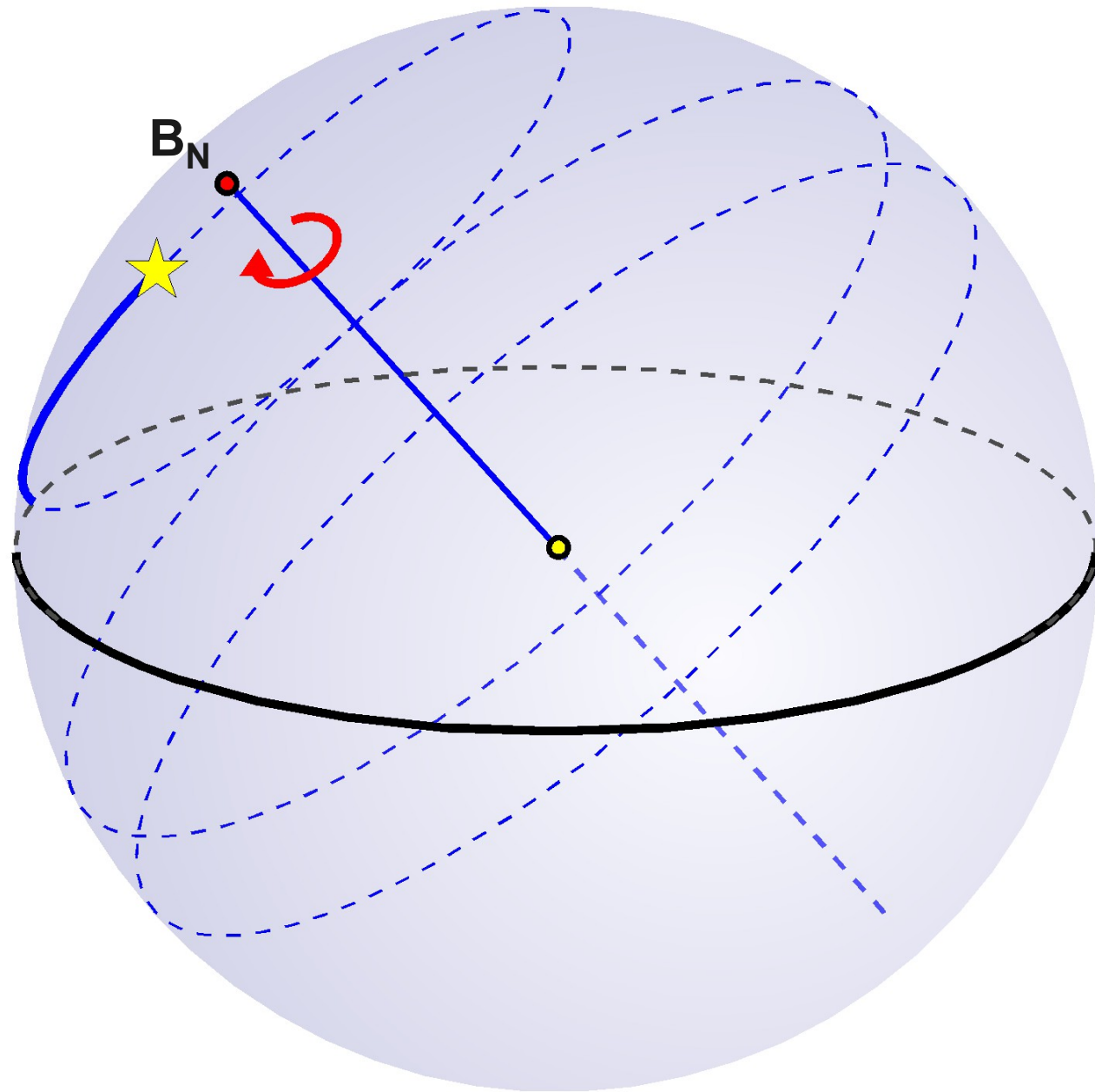


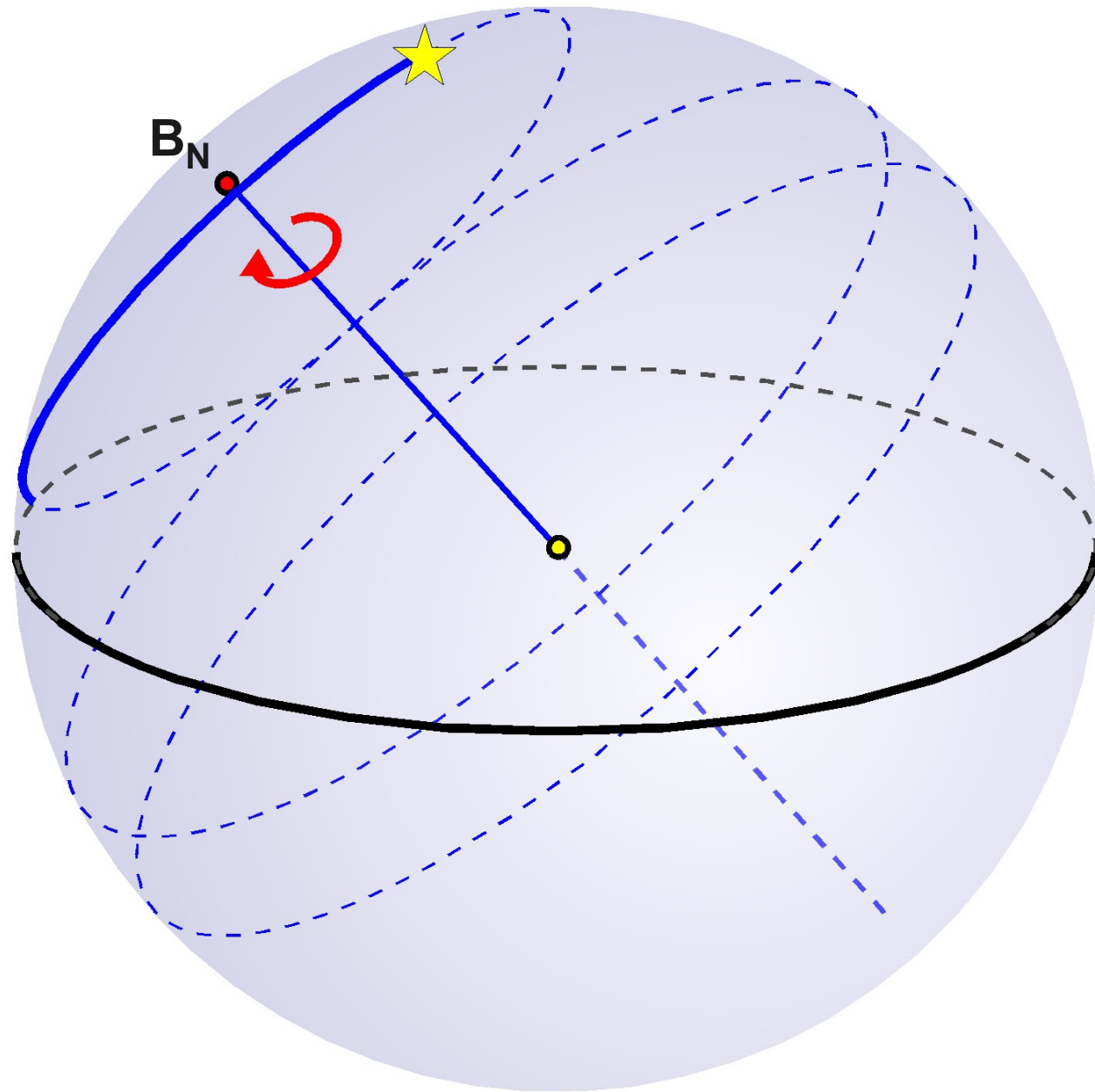


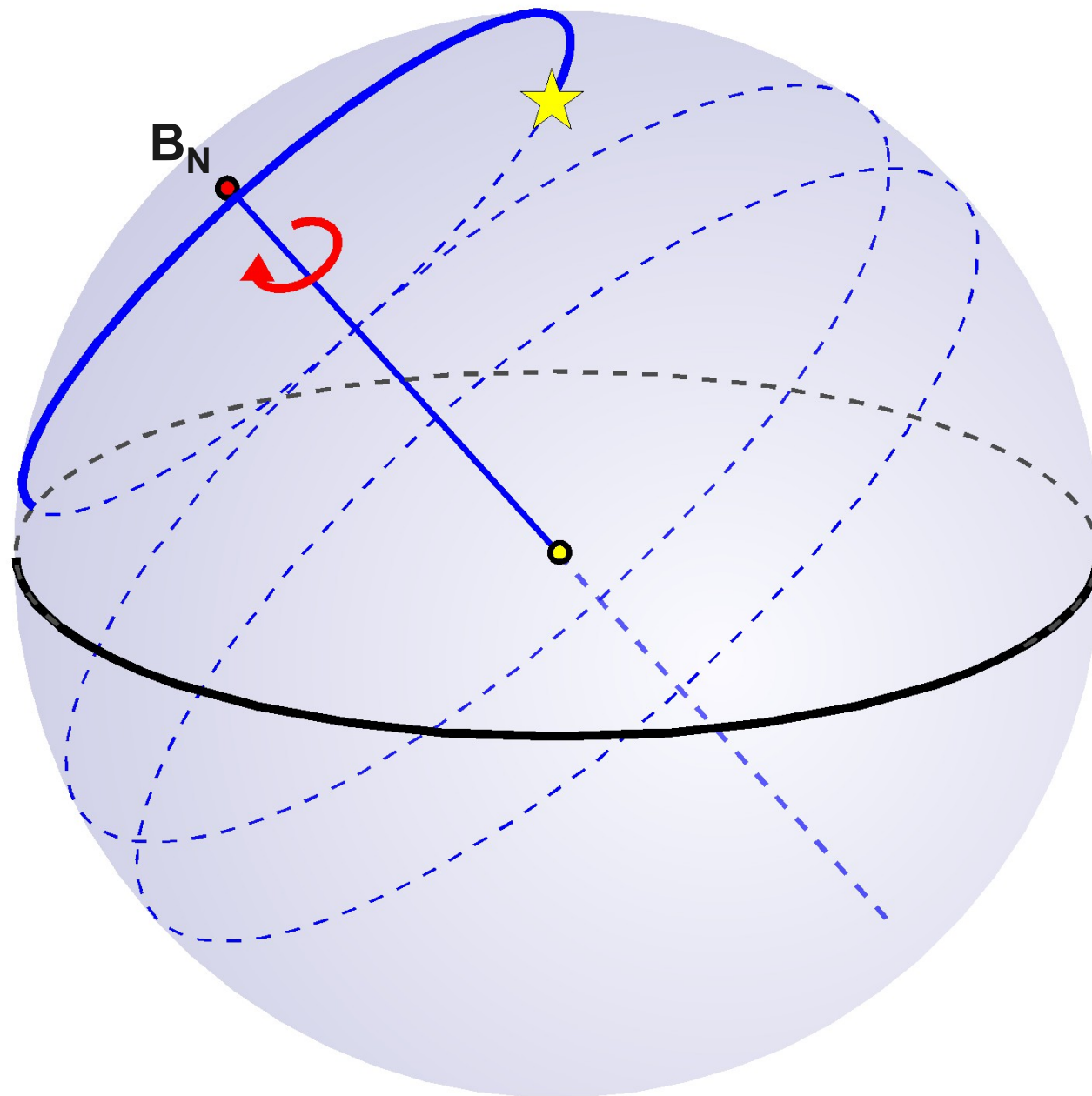


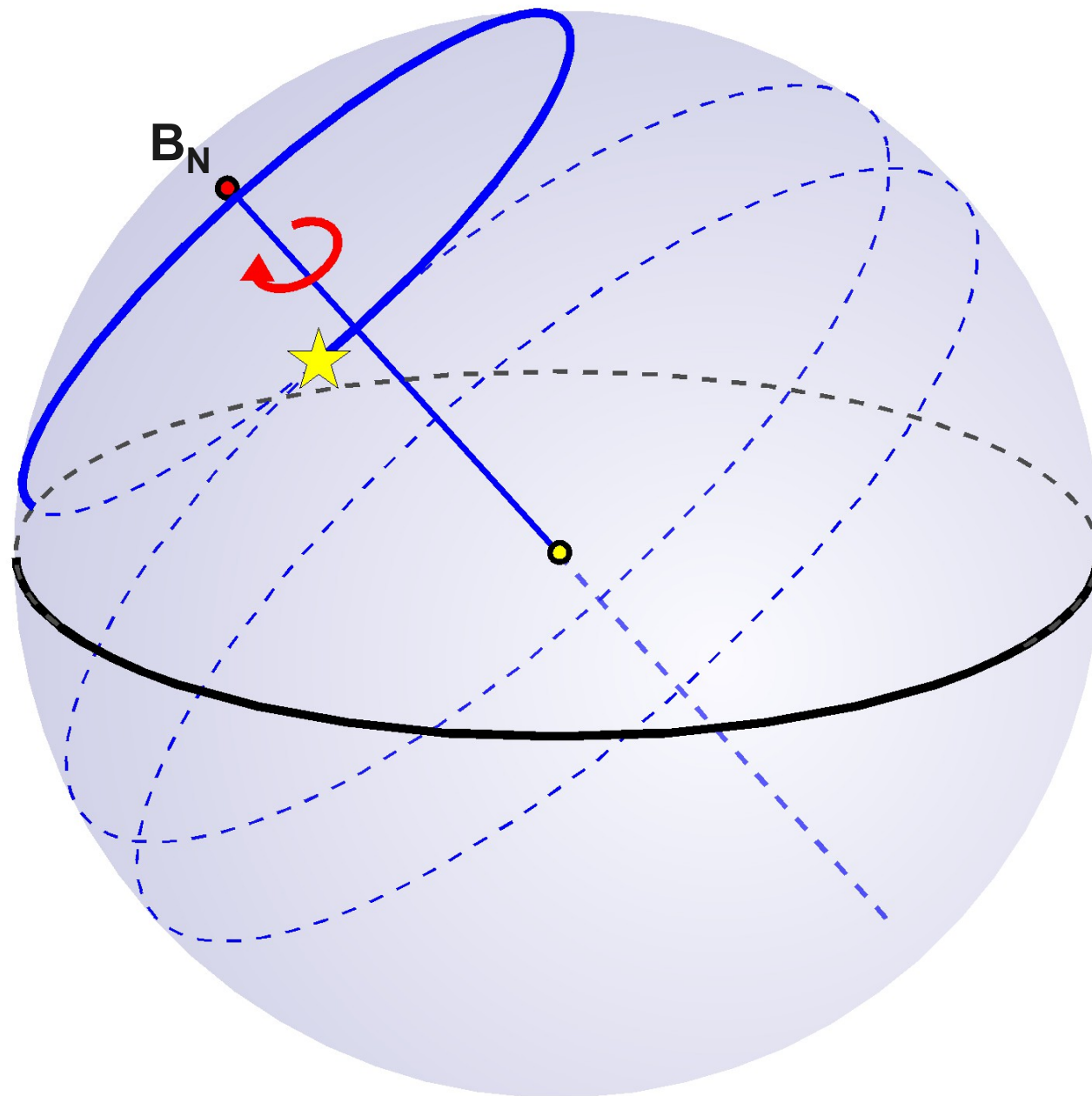


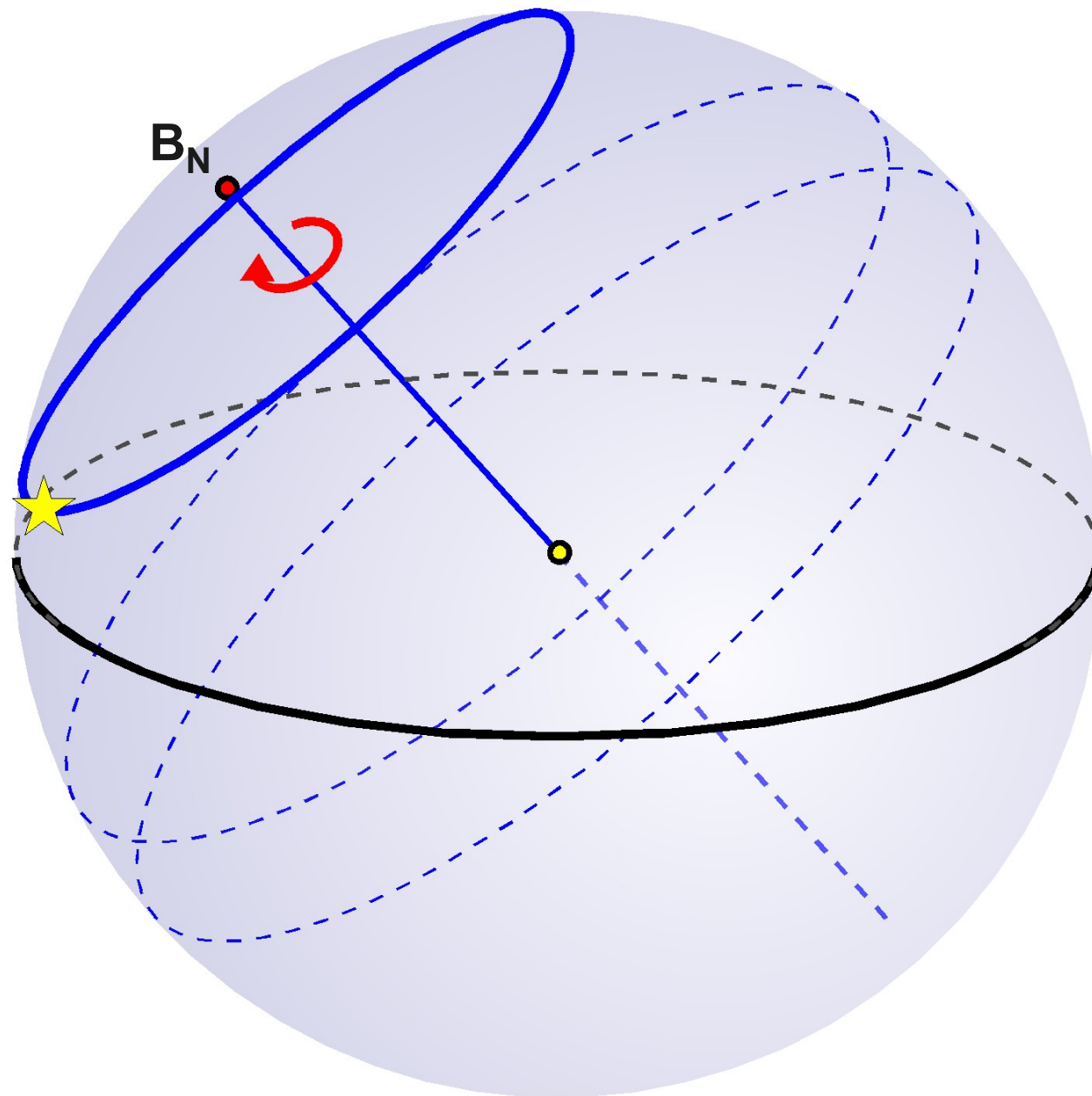


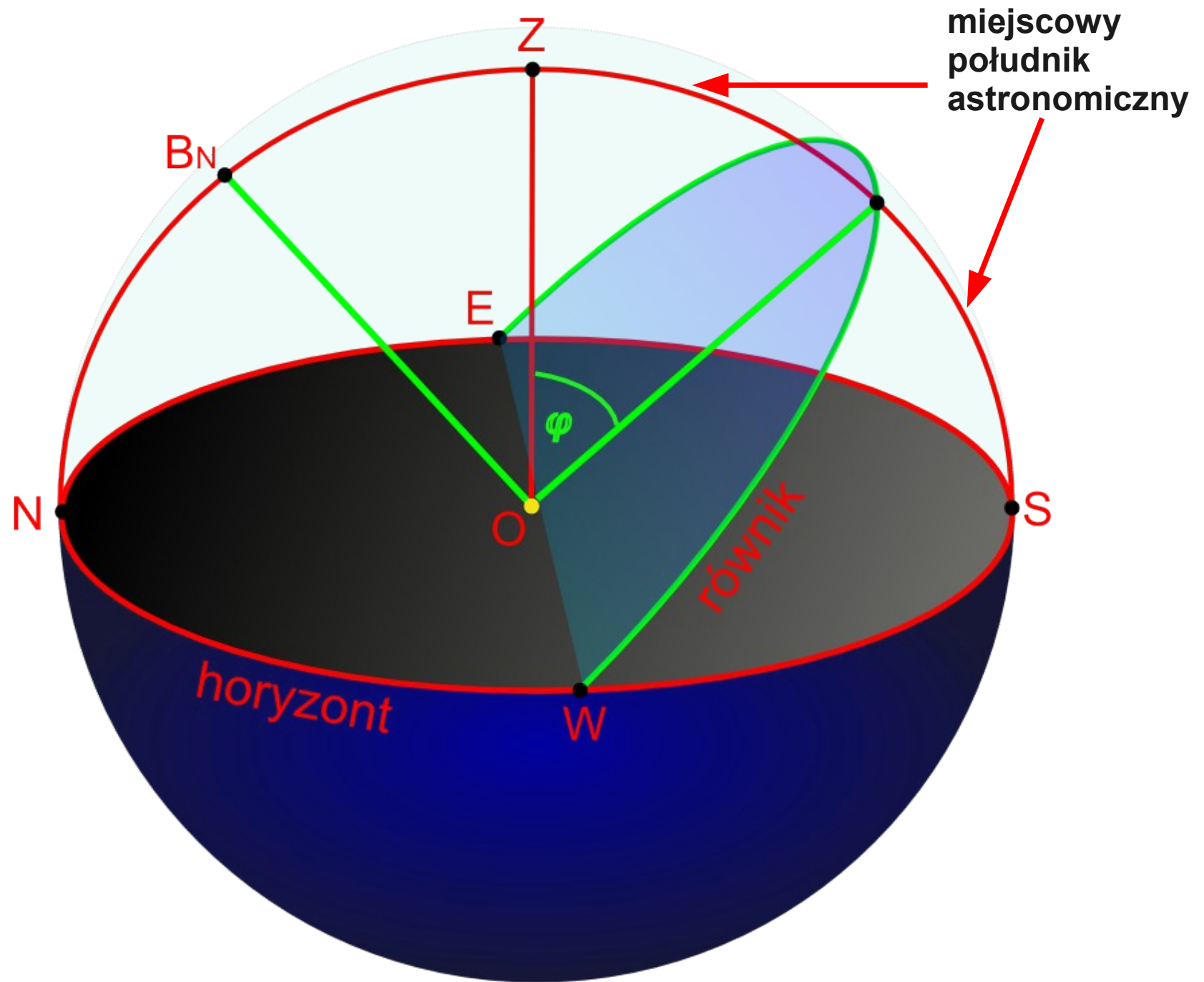


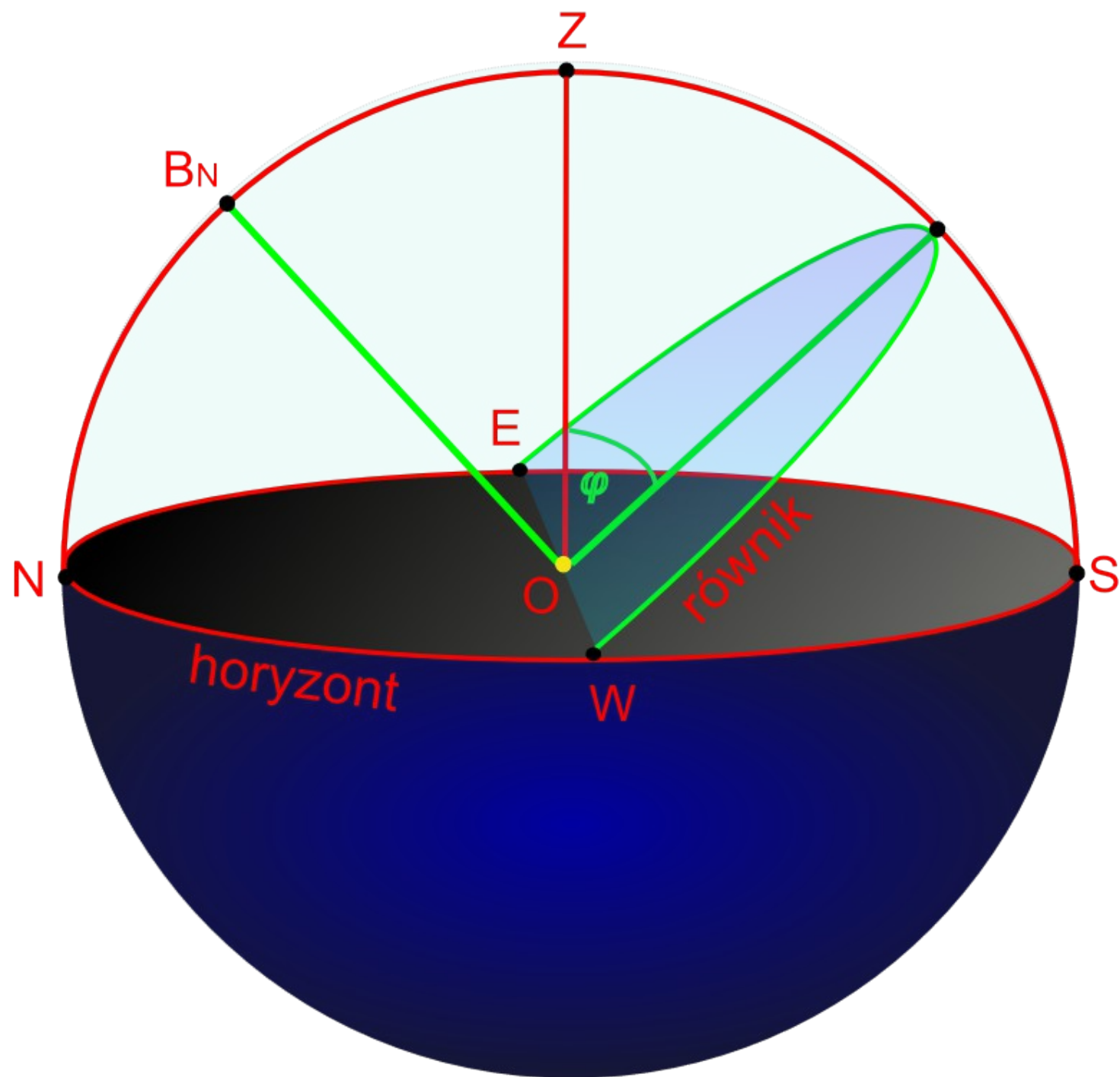


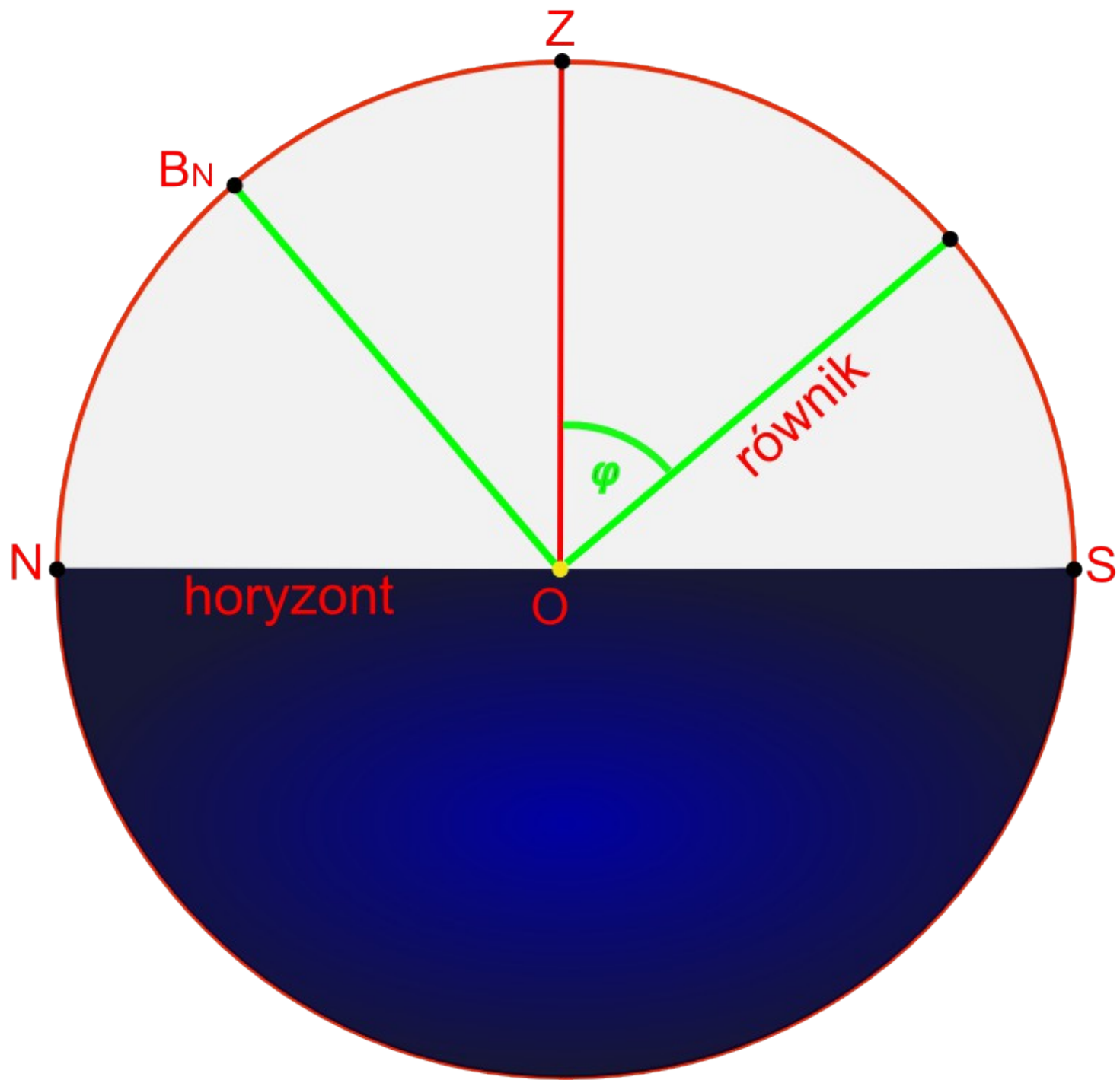


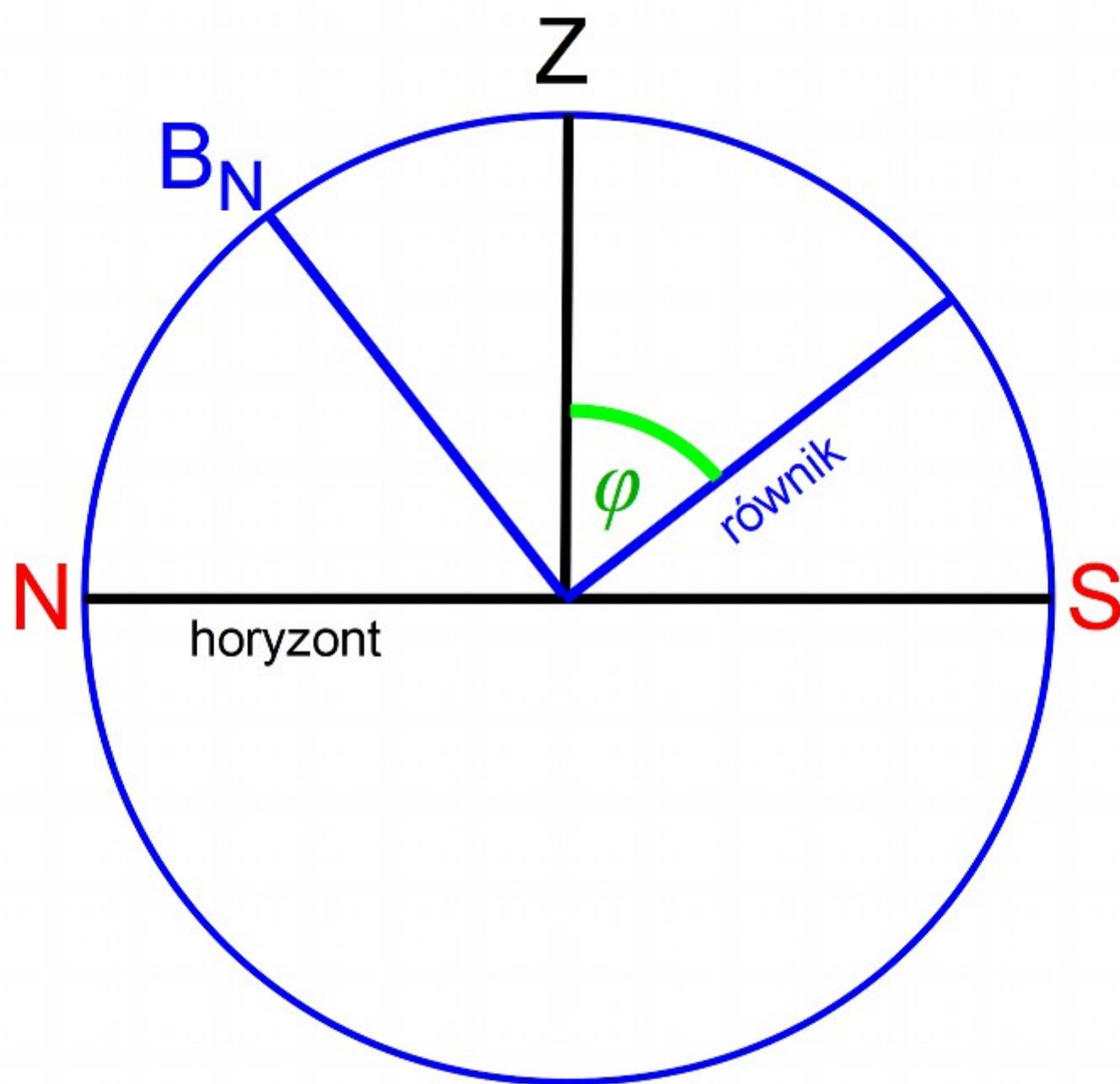




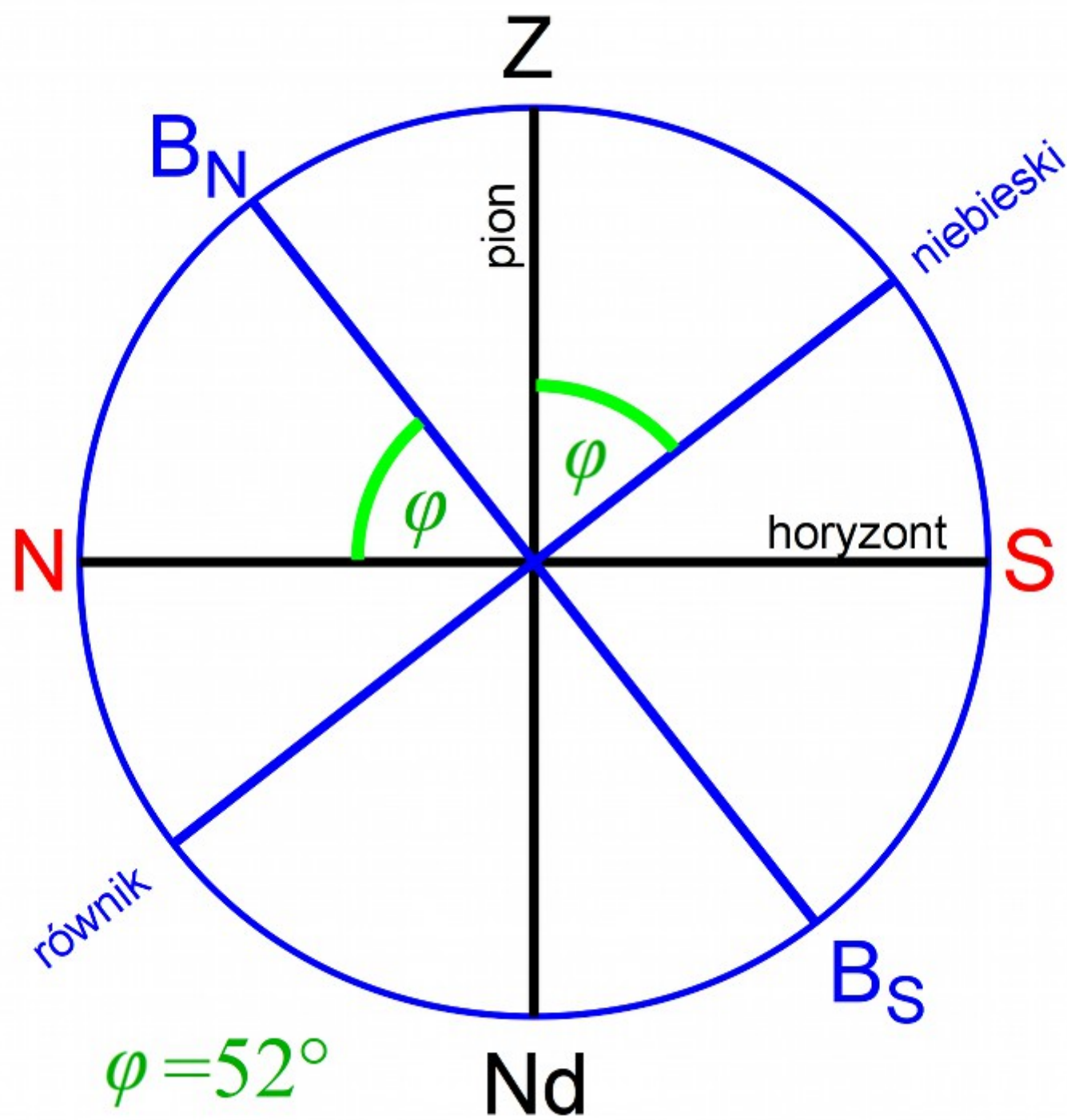


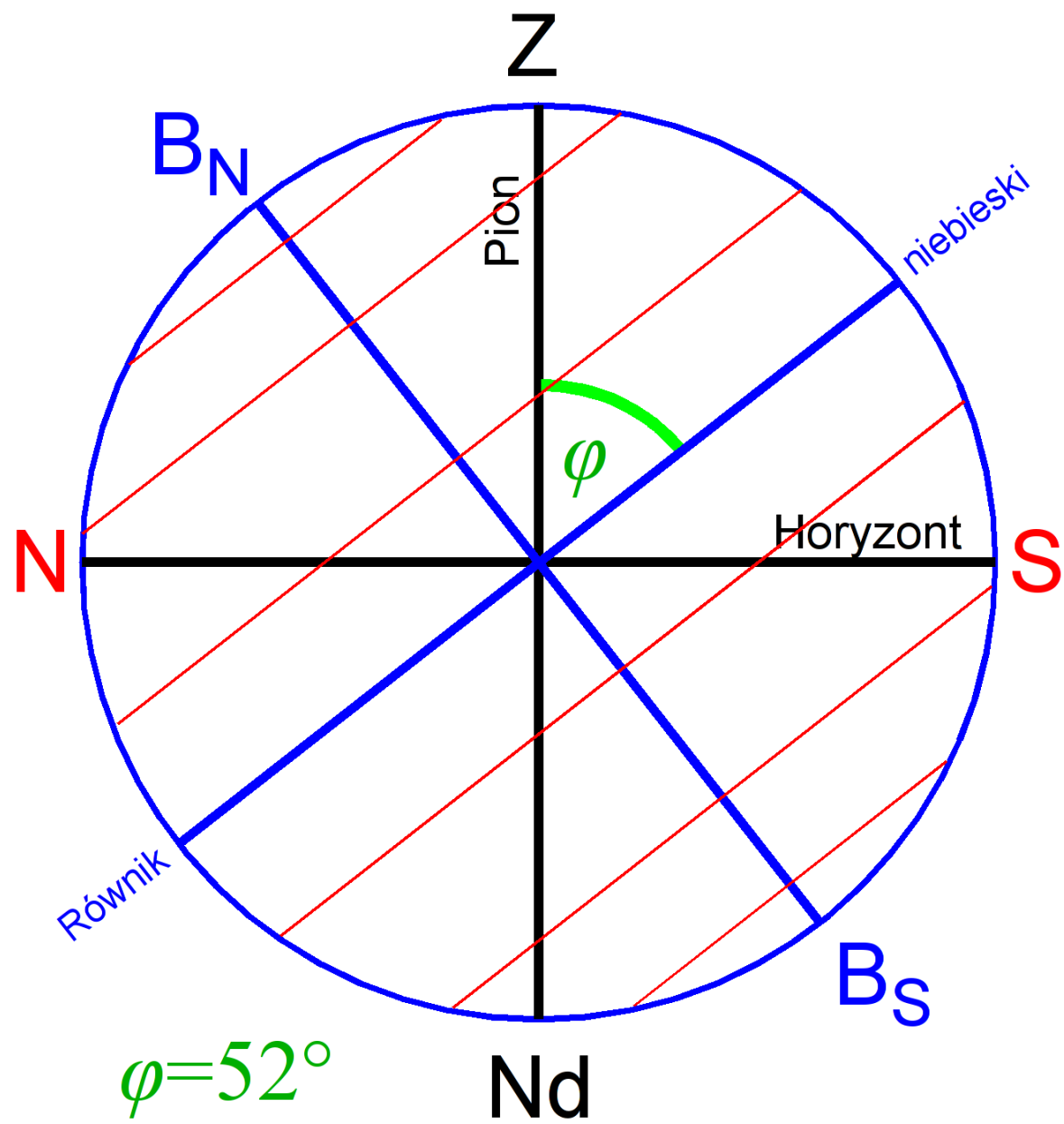


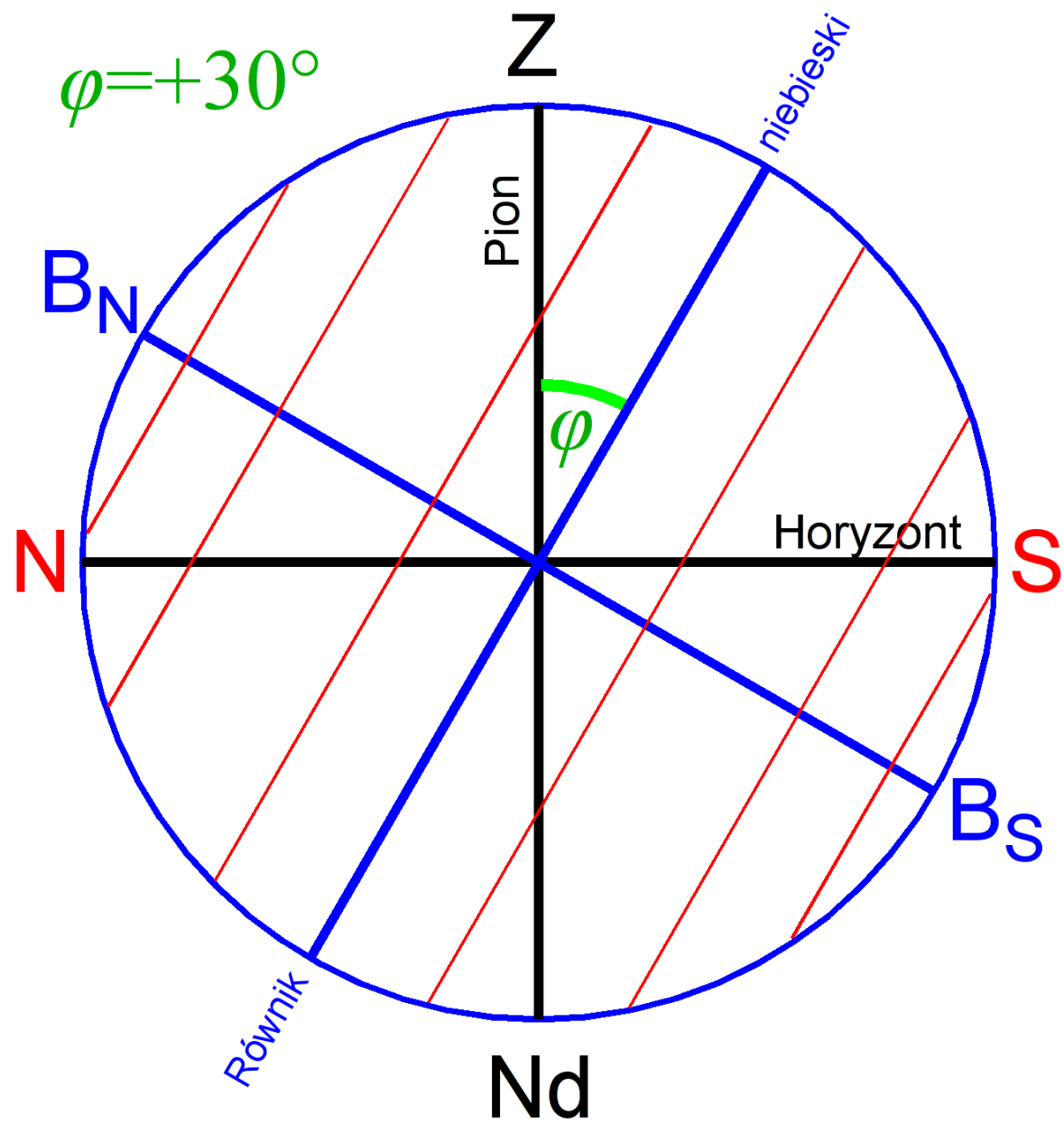


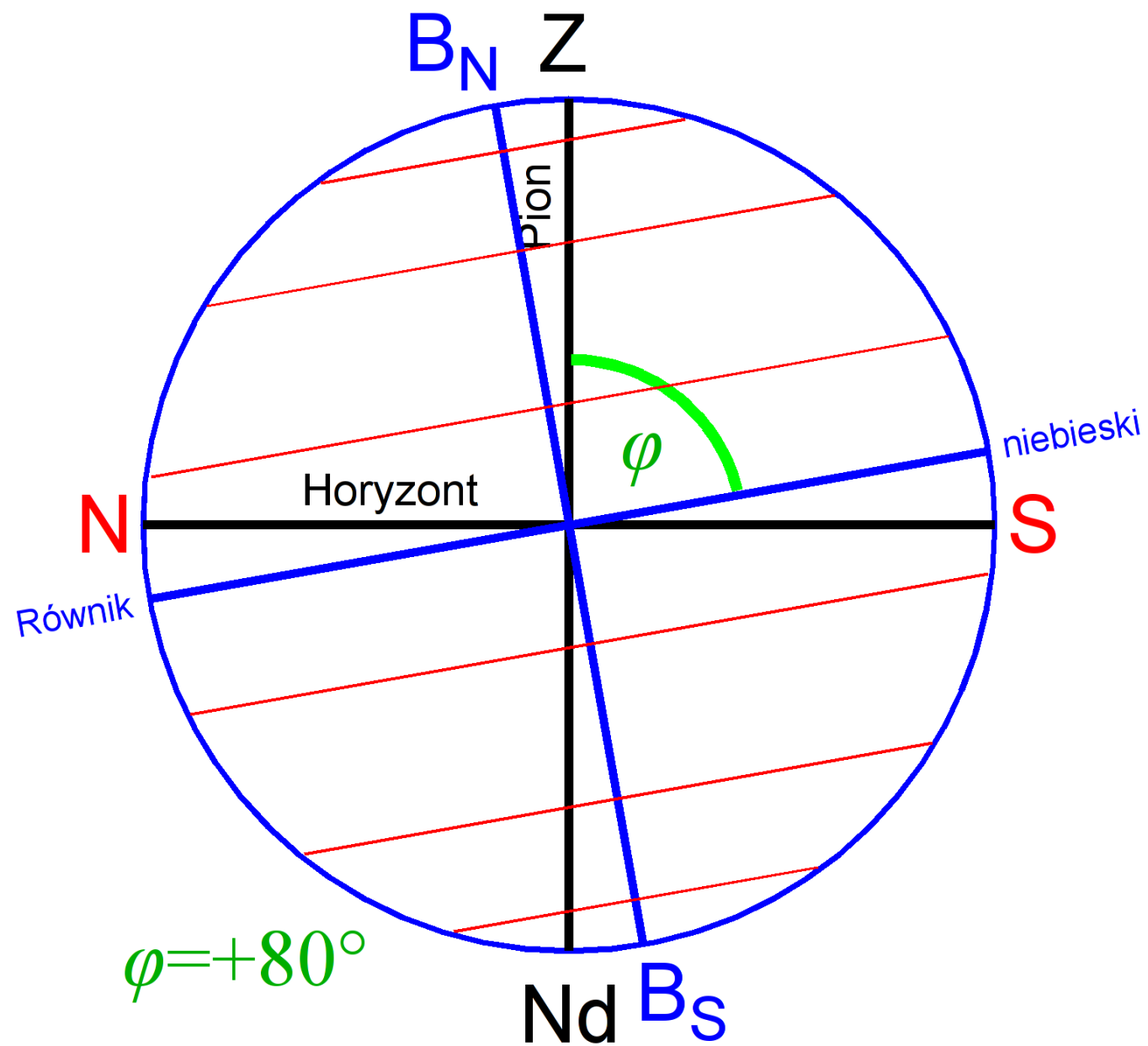


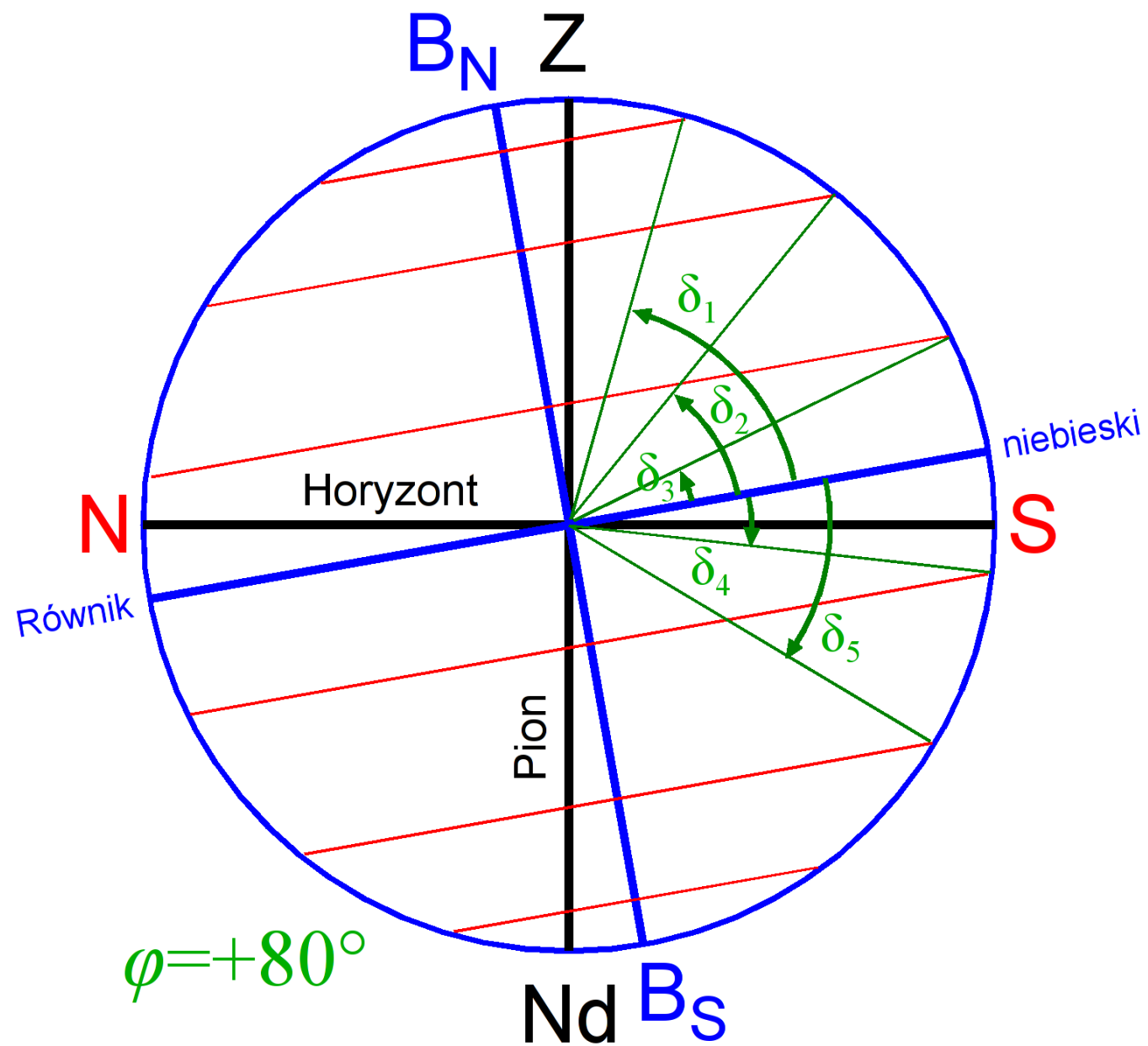
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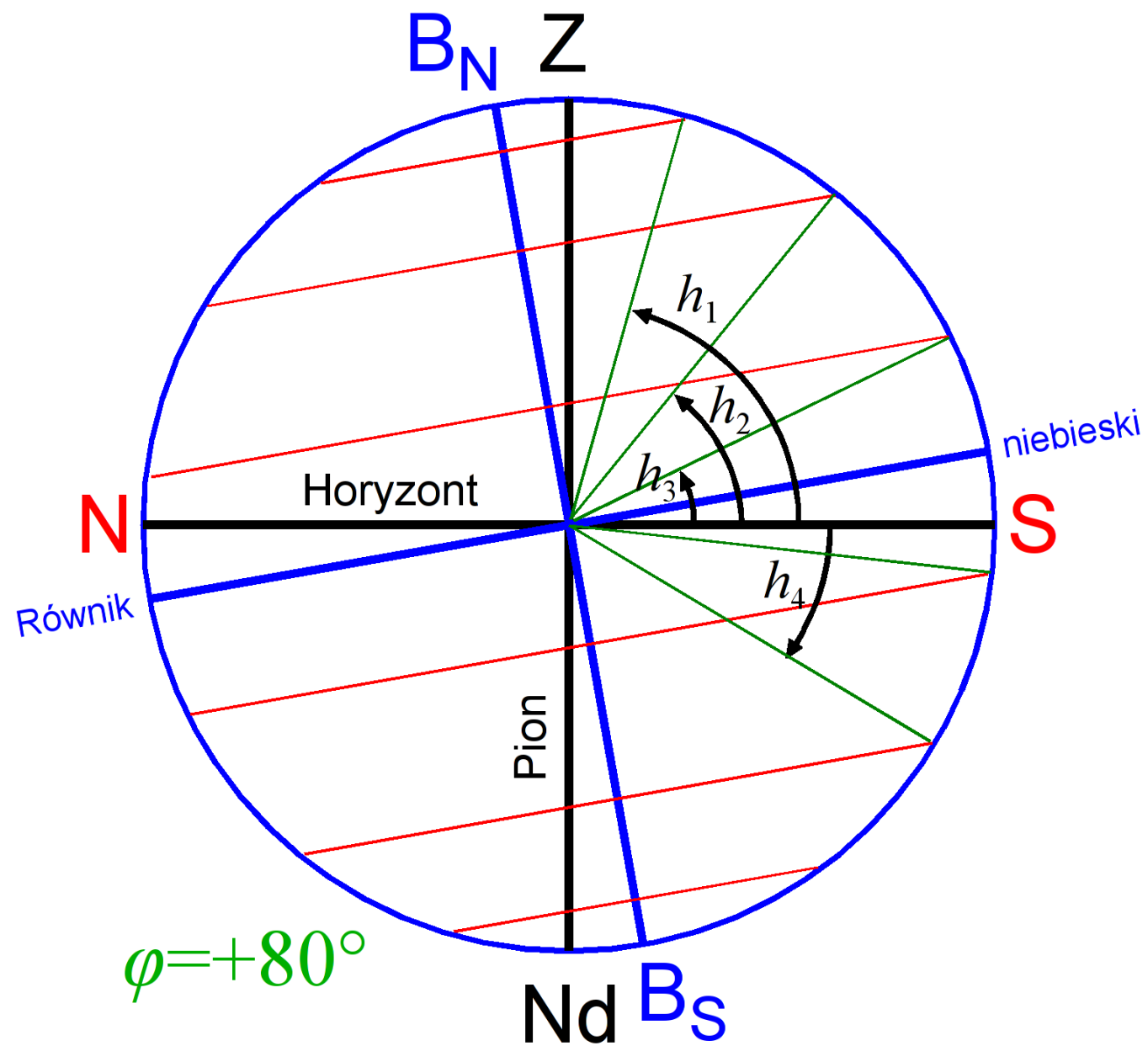


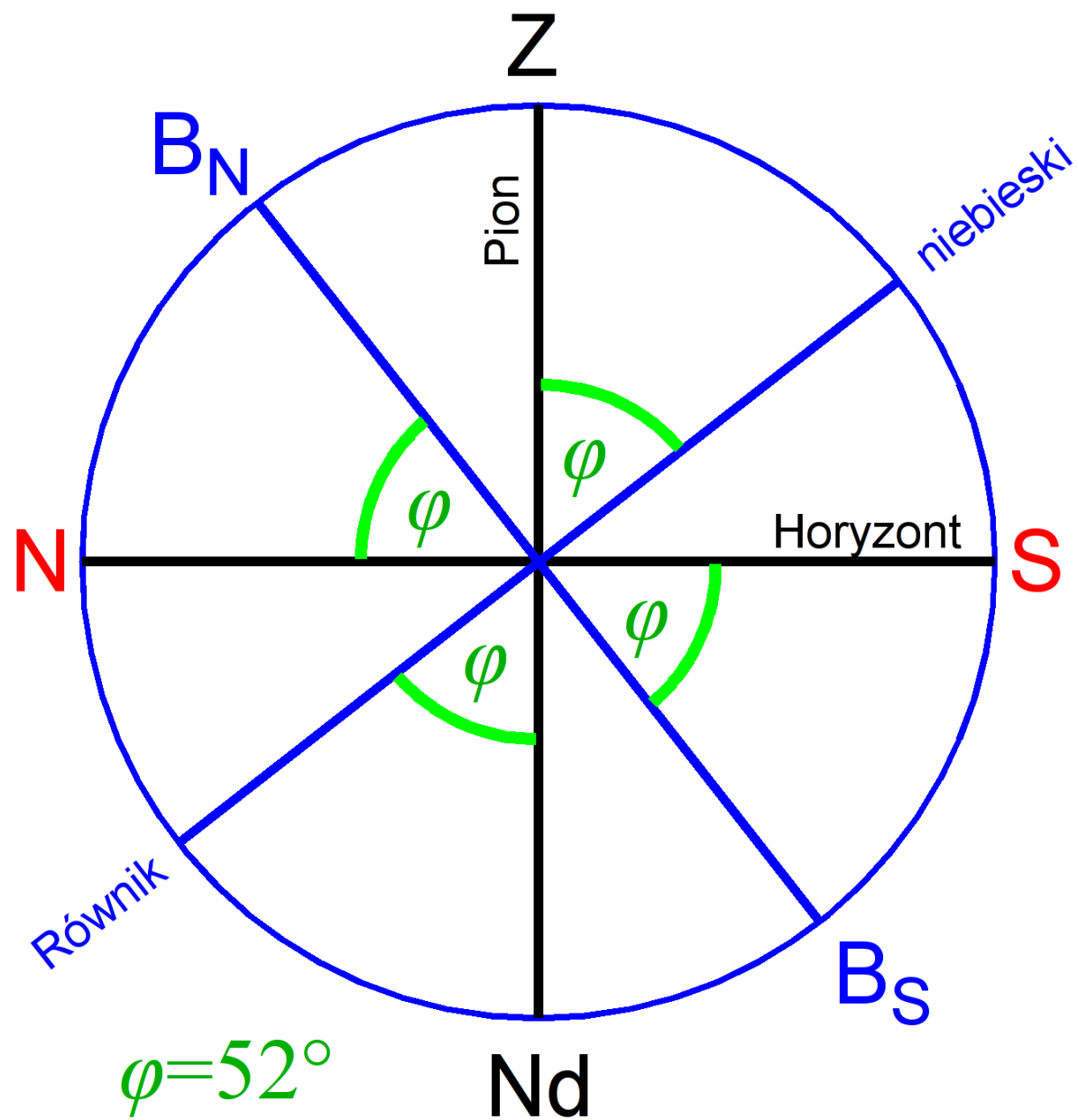


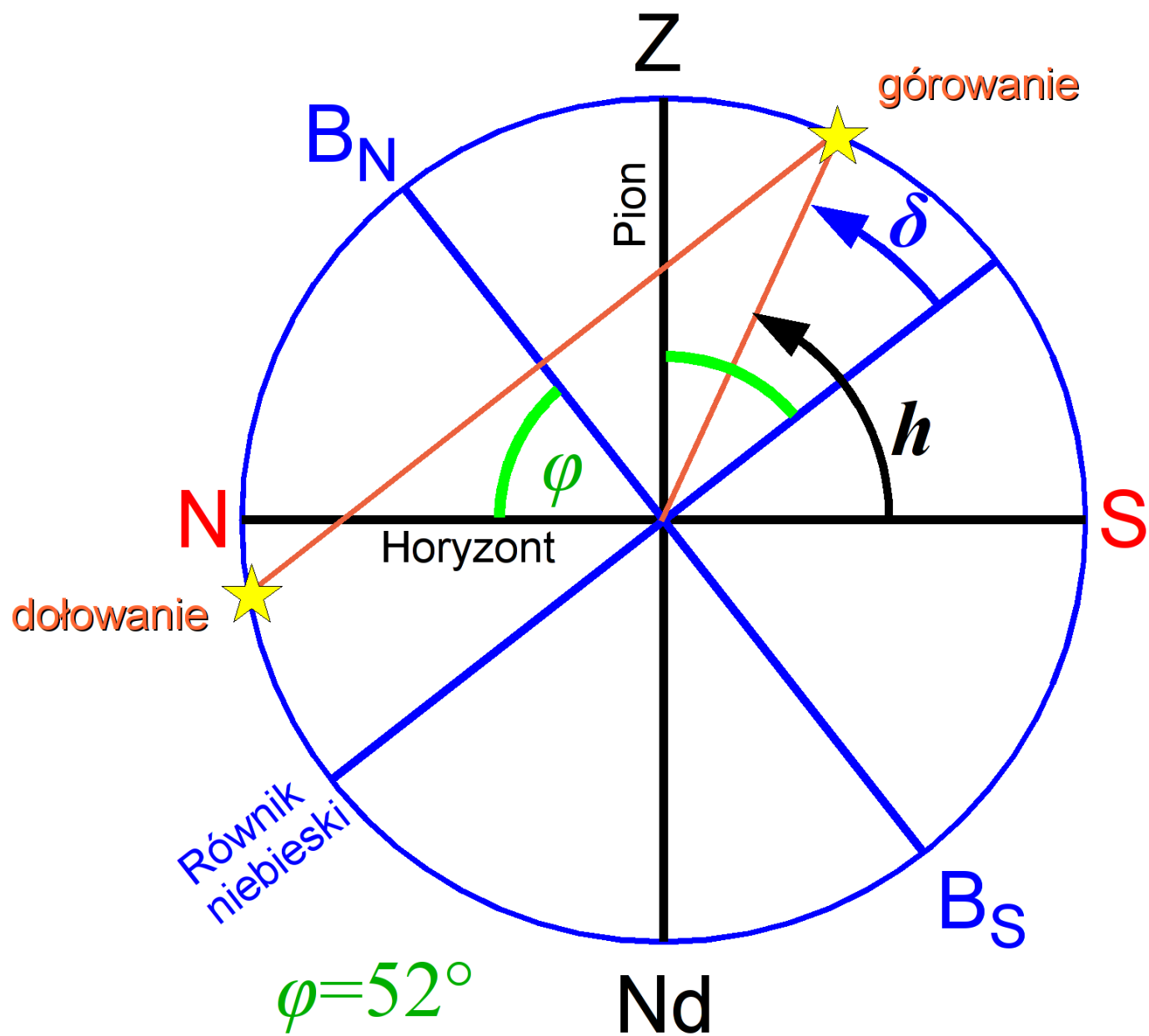


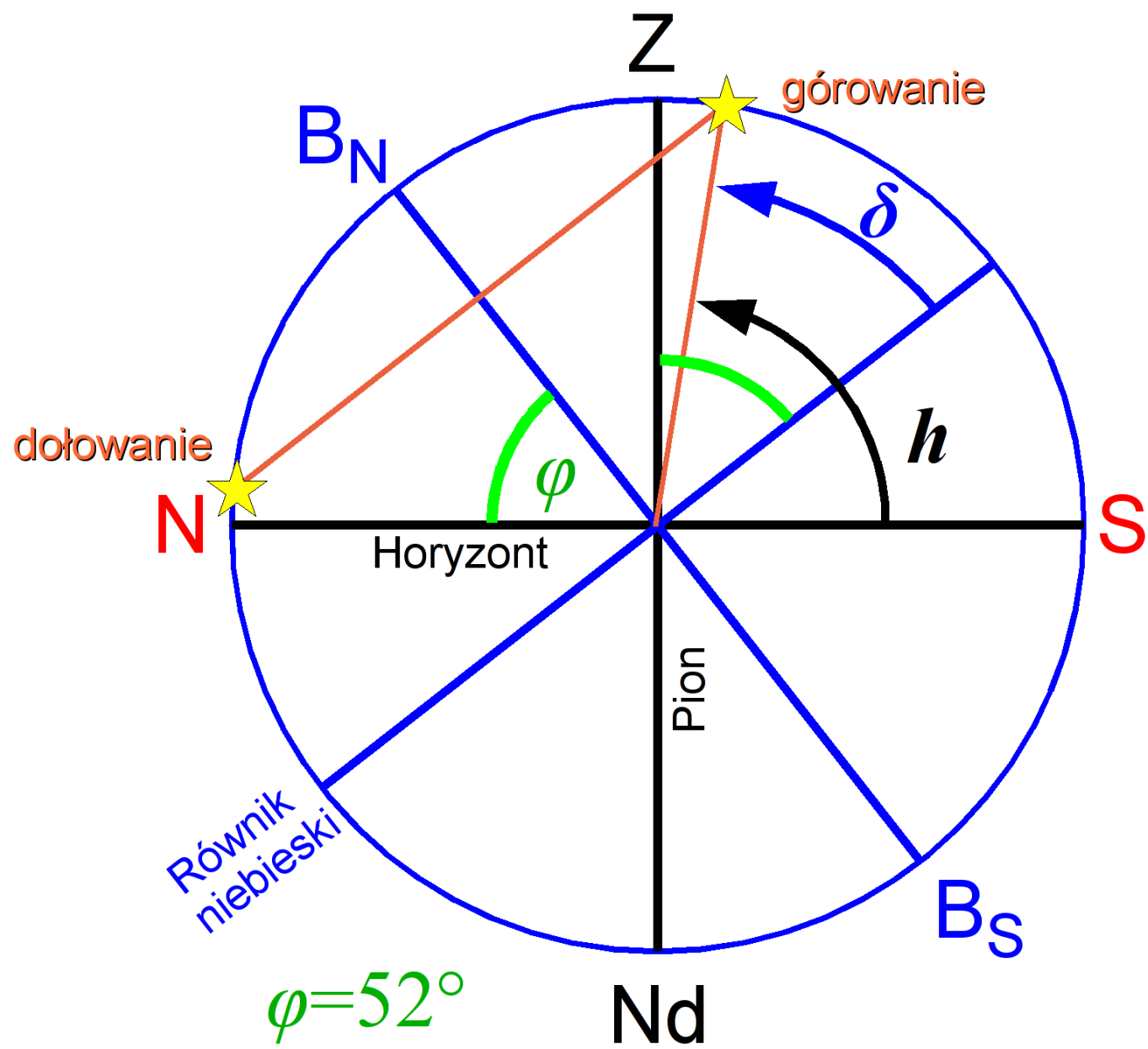


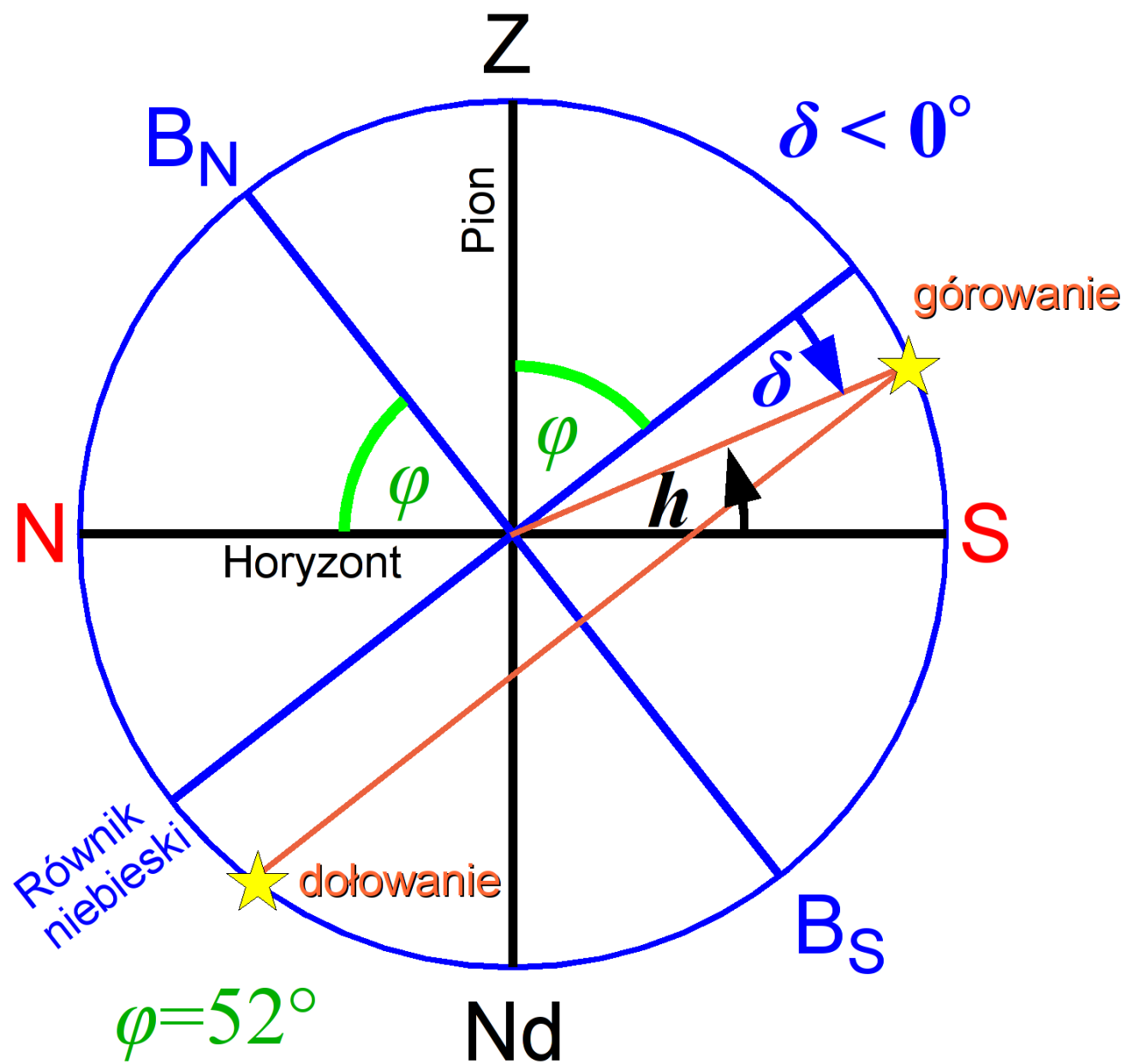


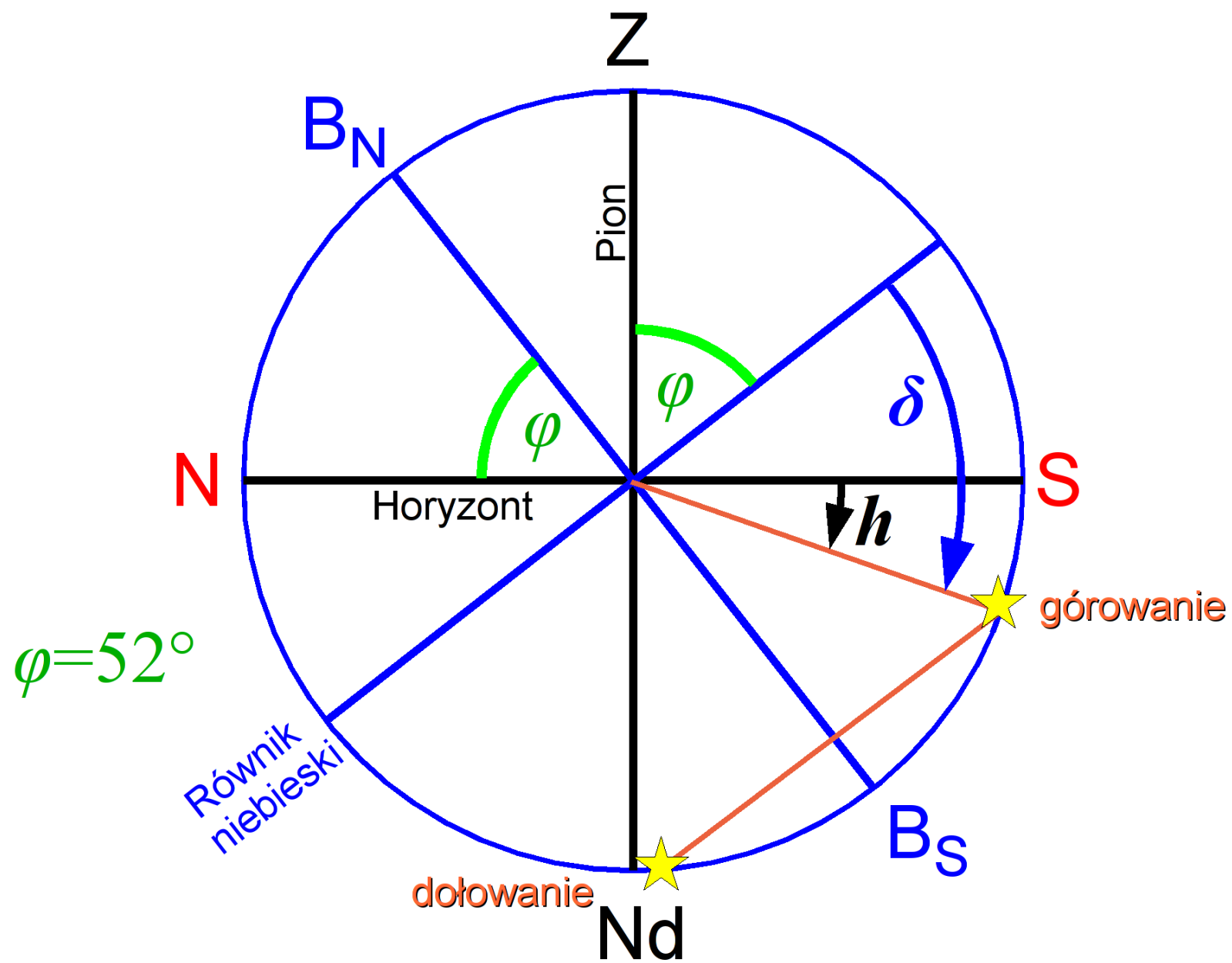


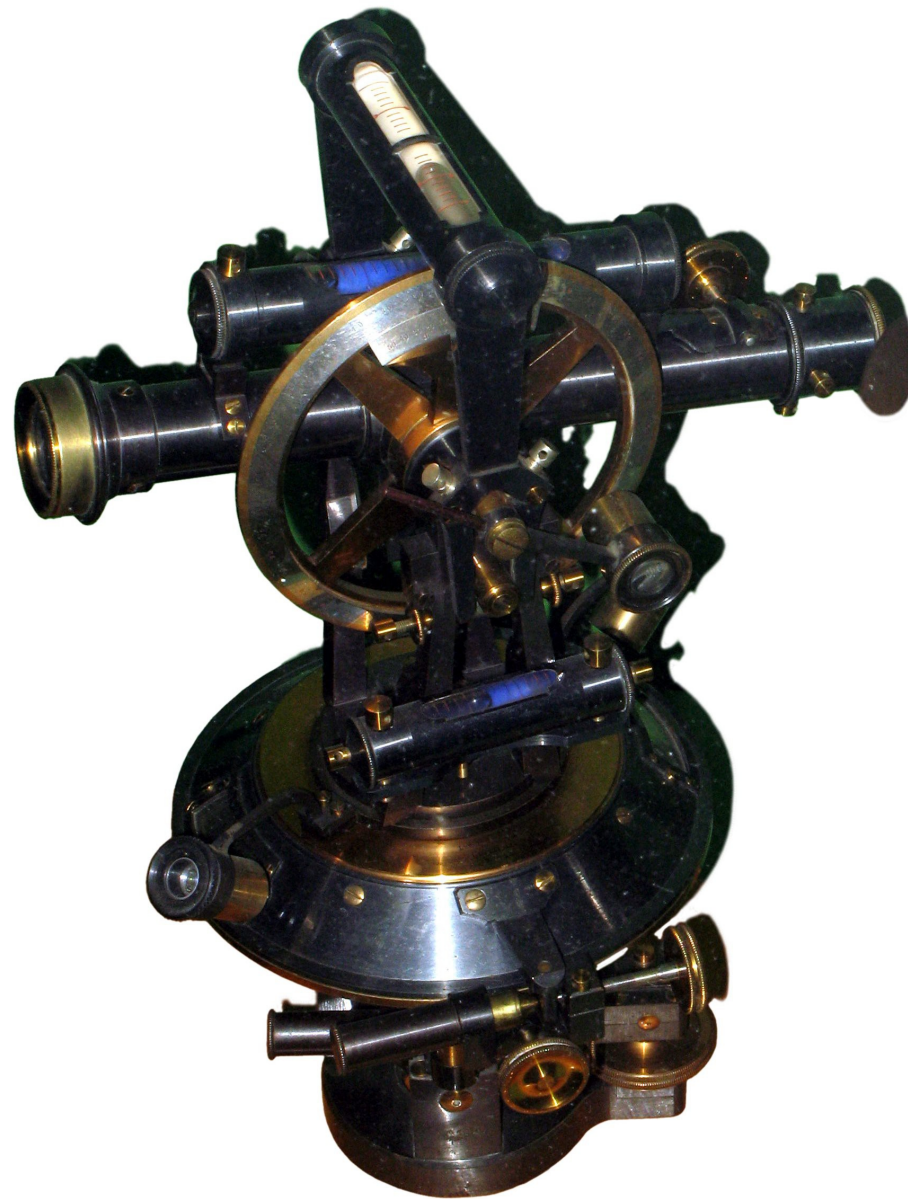




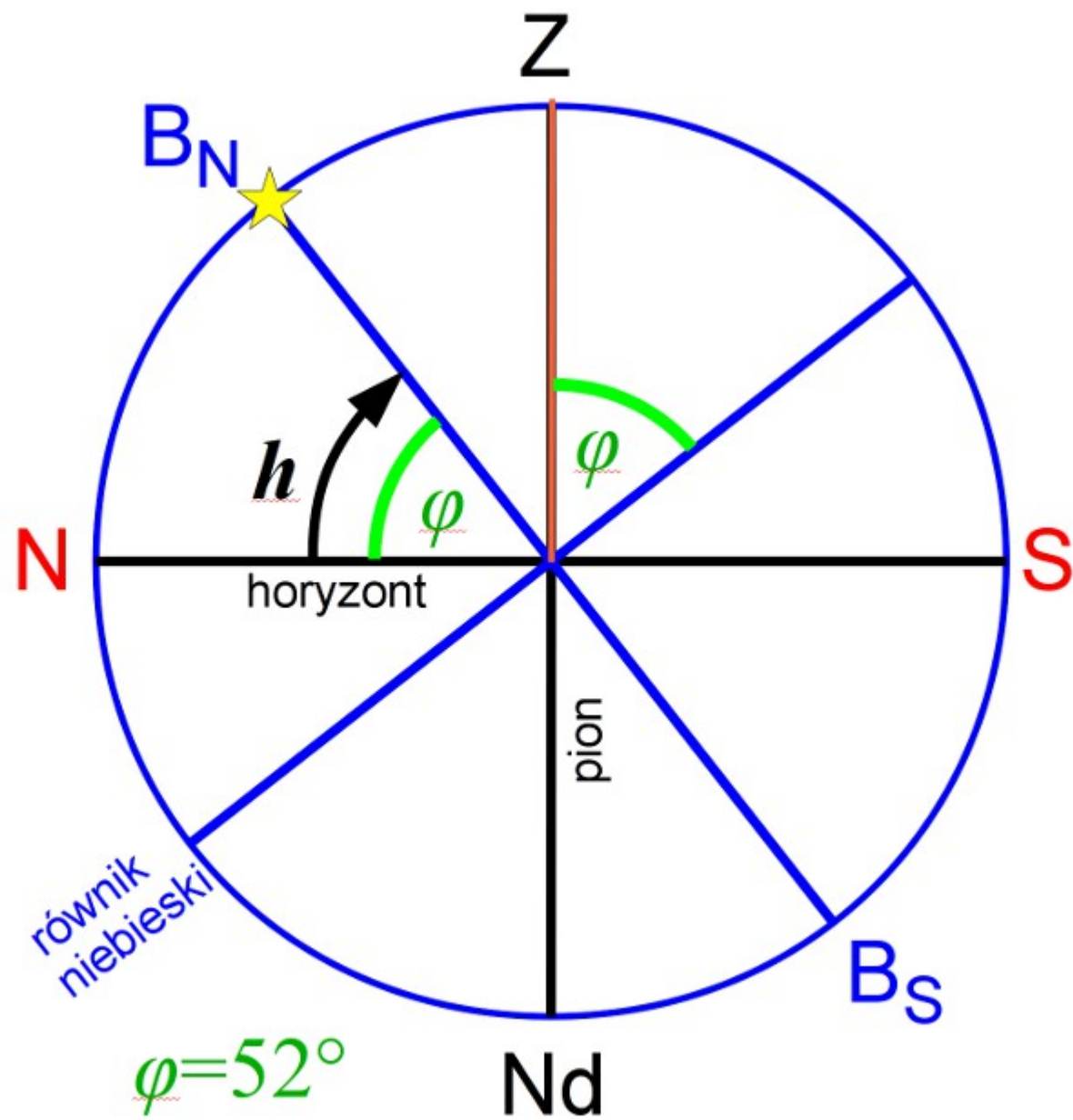


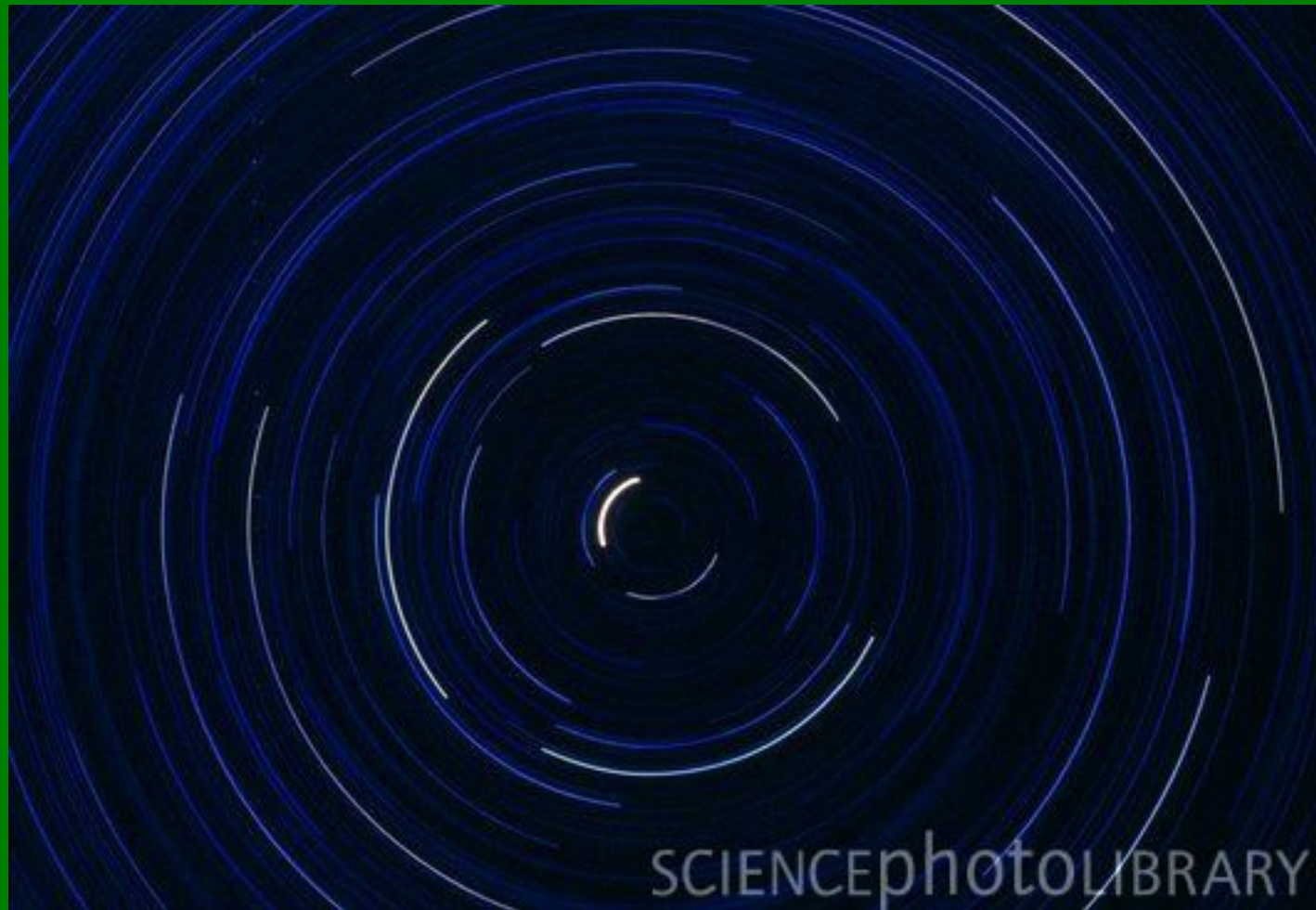


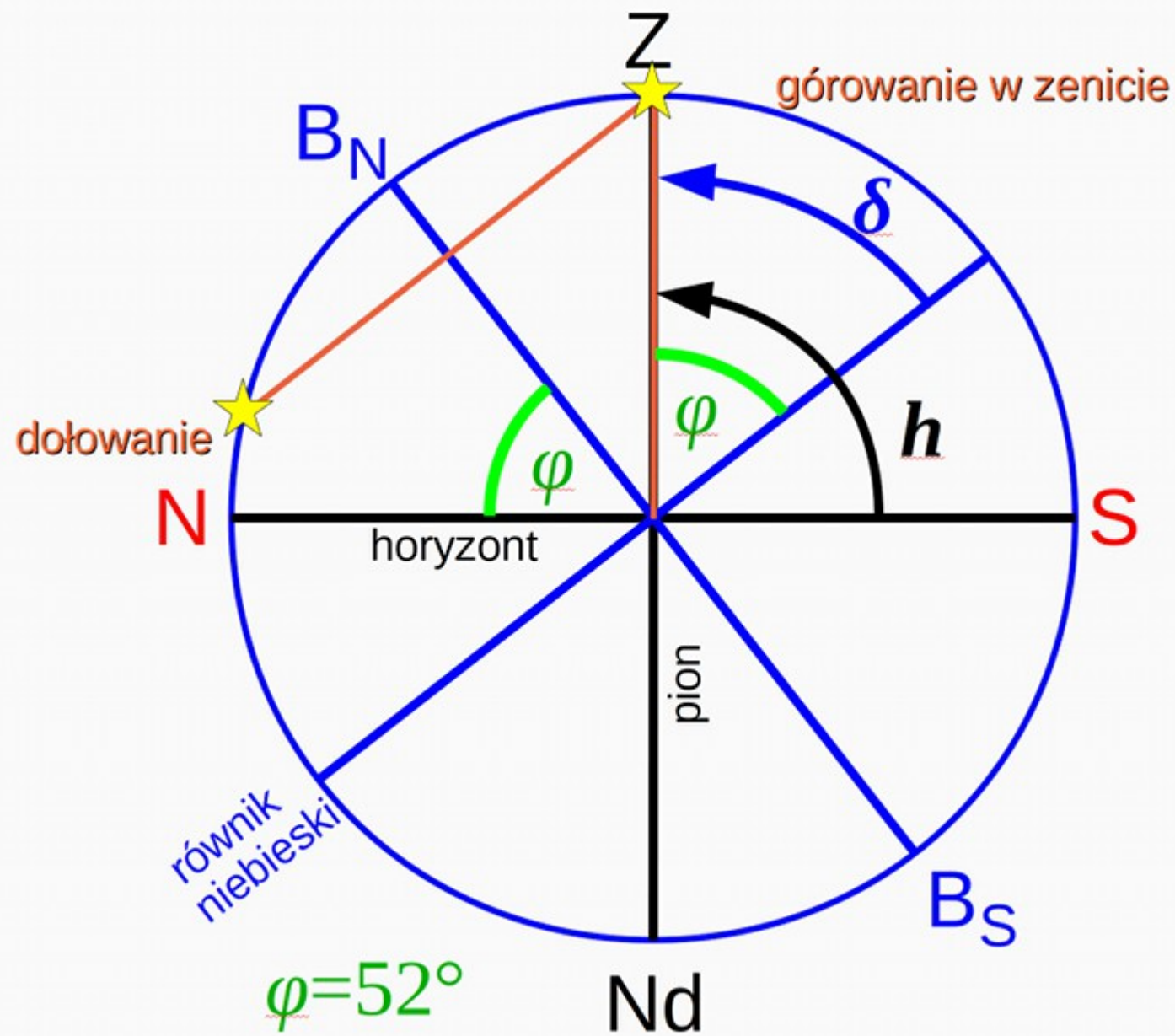


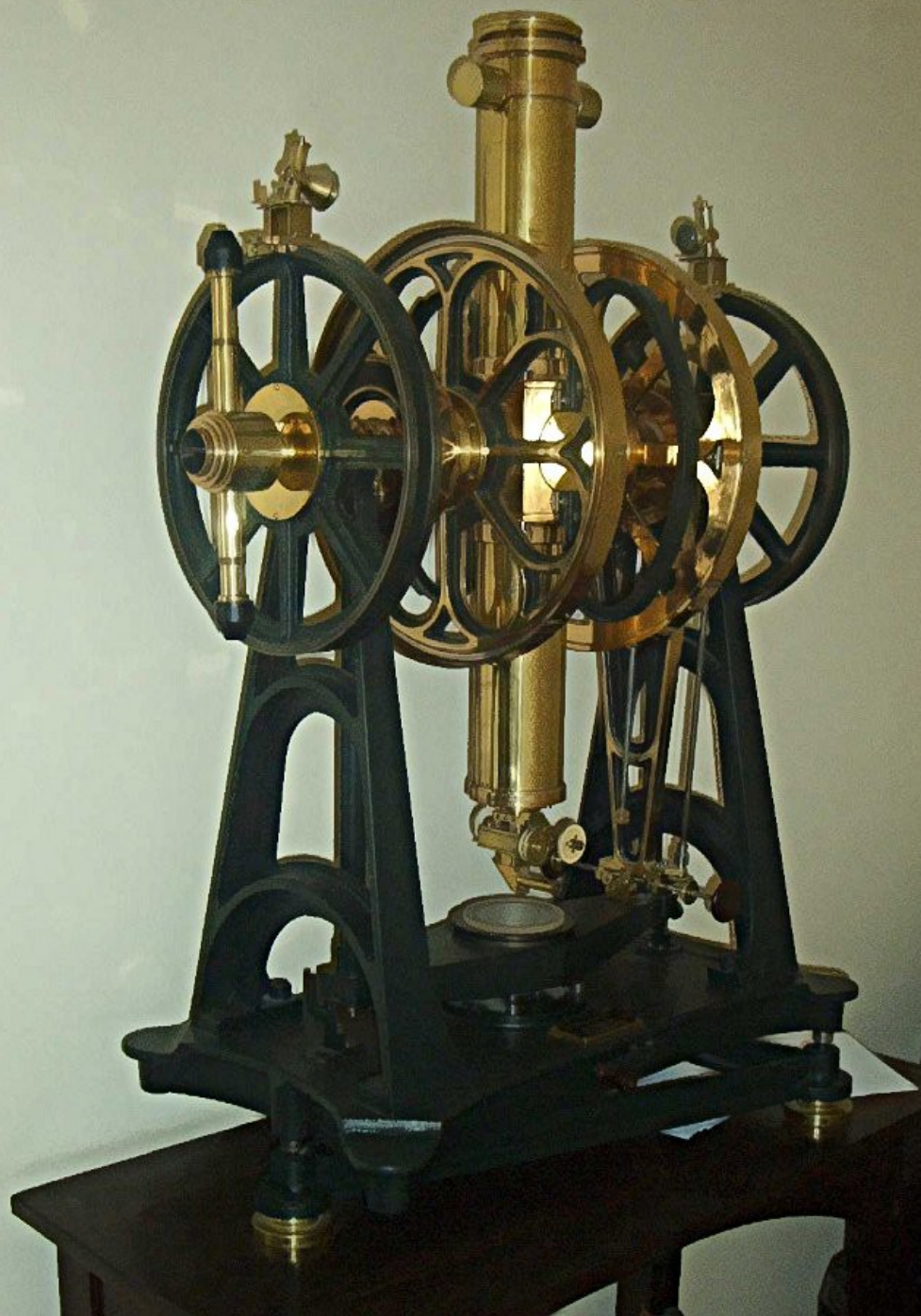


by: Rama

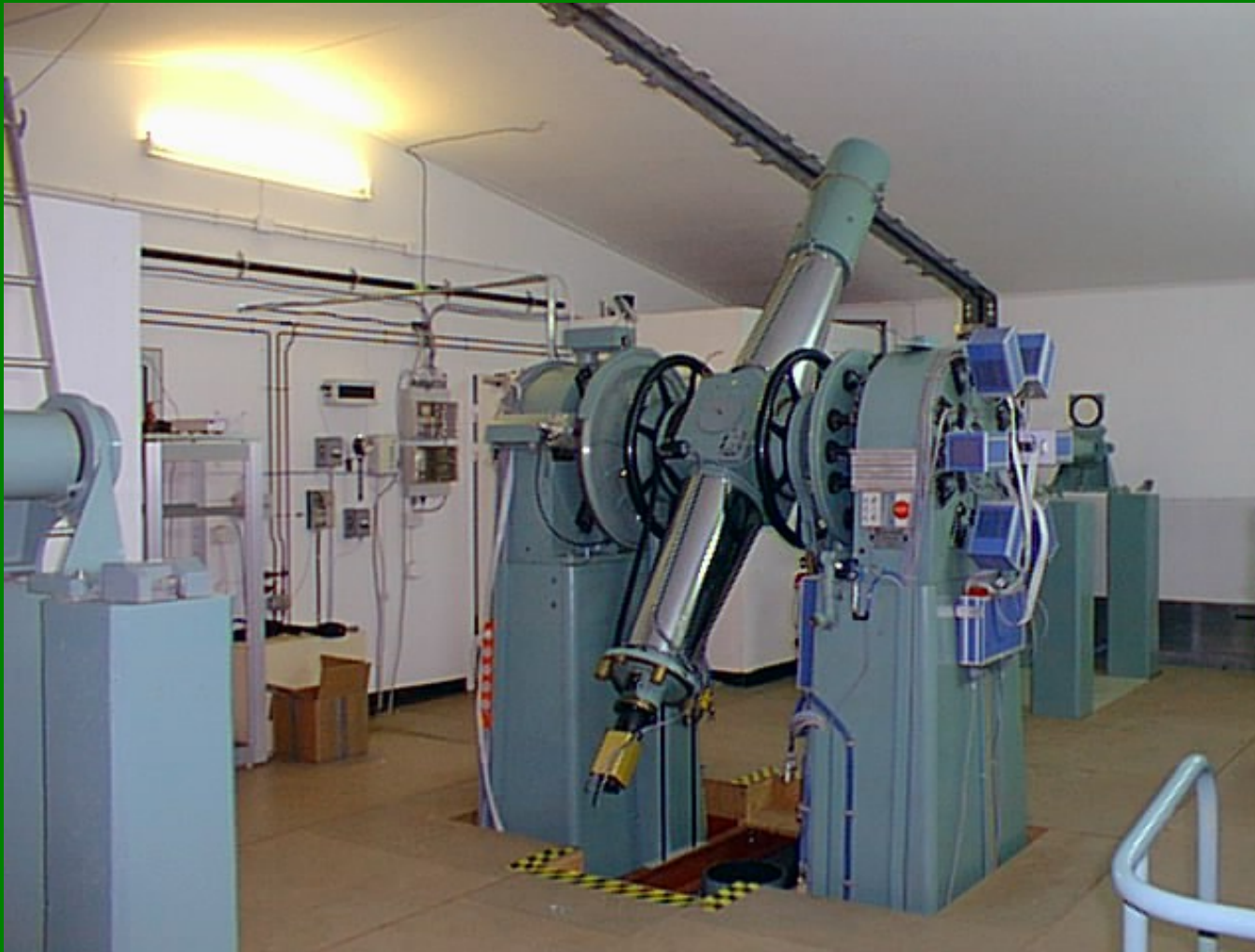




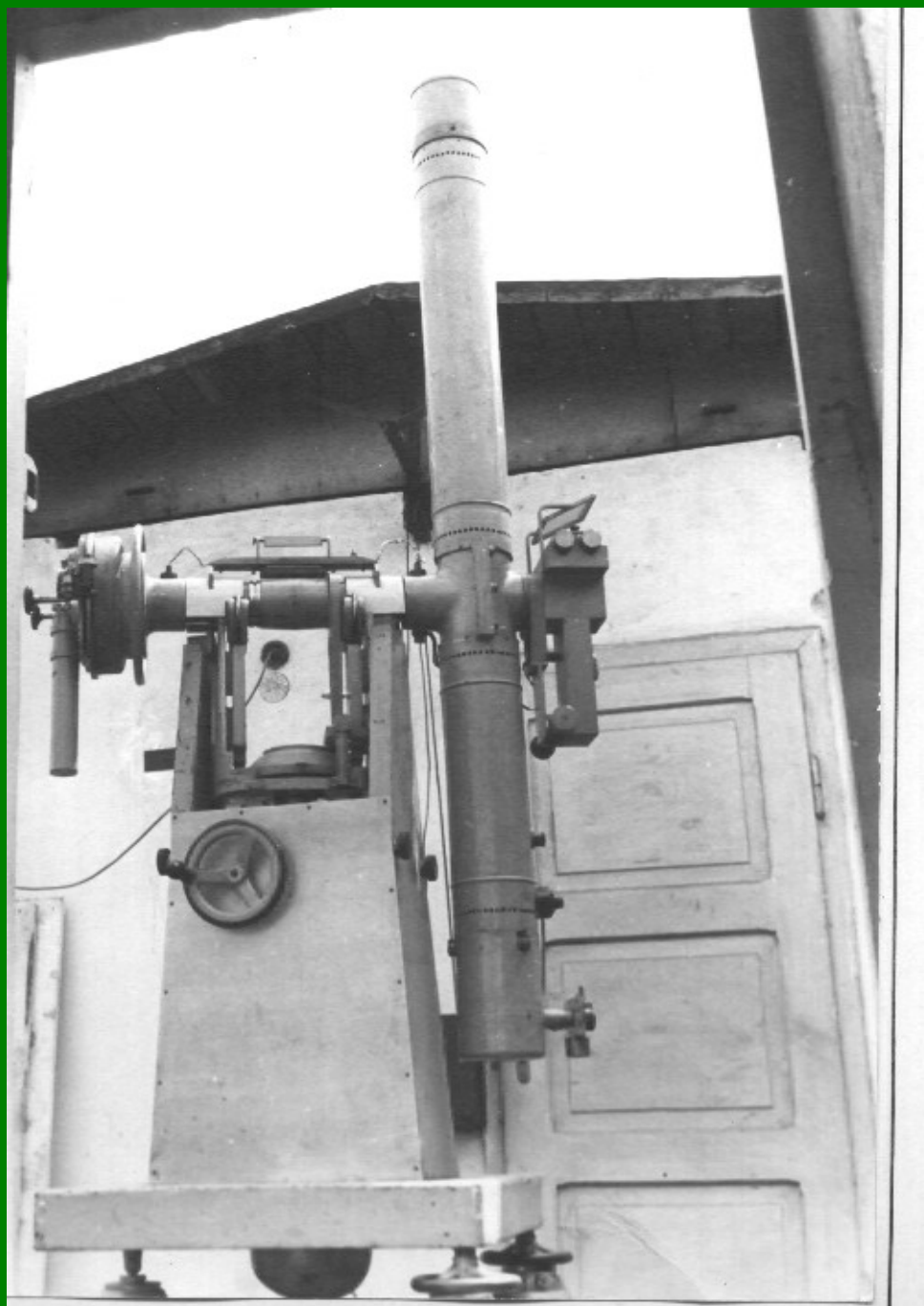




Instrument
przejściowy
obserwatorium
poznańskiego.



**Carlsberg Meridian Telescope
picture taken by Dafydd Wyn Evans.**



Teleskop zenitalny obserwatorium poznańskiego