

Stargazing Live!

Observing the Winter Skies

How to find your way around
&

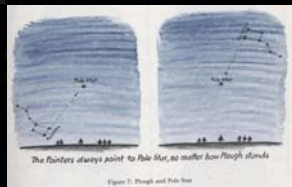
Start observing

Malcolm Zack and Steve Richards

Loughton Astronomical Society

January 2012

Why stars rise and set

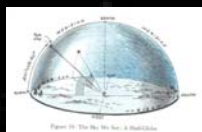


The Loughton List - our favourite sights



Favourite books

How to orientate yourself



Introduction to key signposts and some winter stars



Using Binoculars and Small telescopes



Beginners section

- Face where you think north is.

Orientating yourself

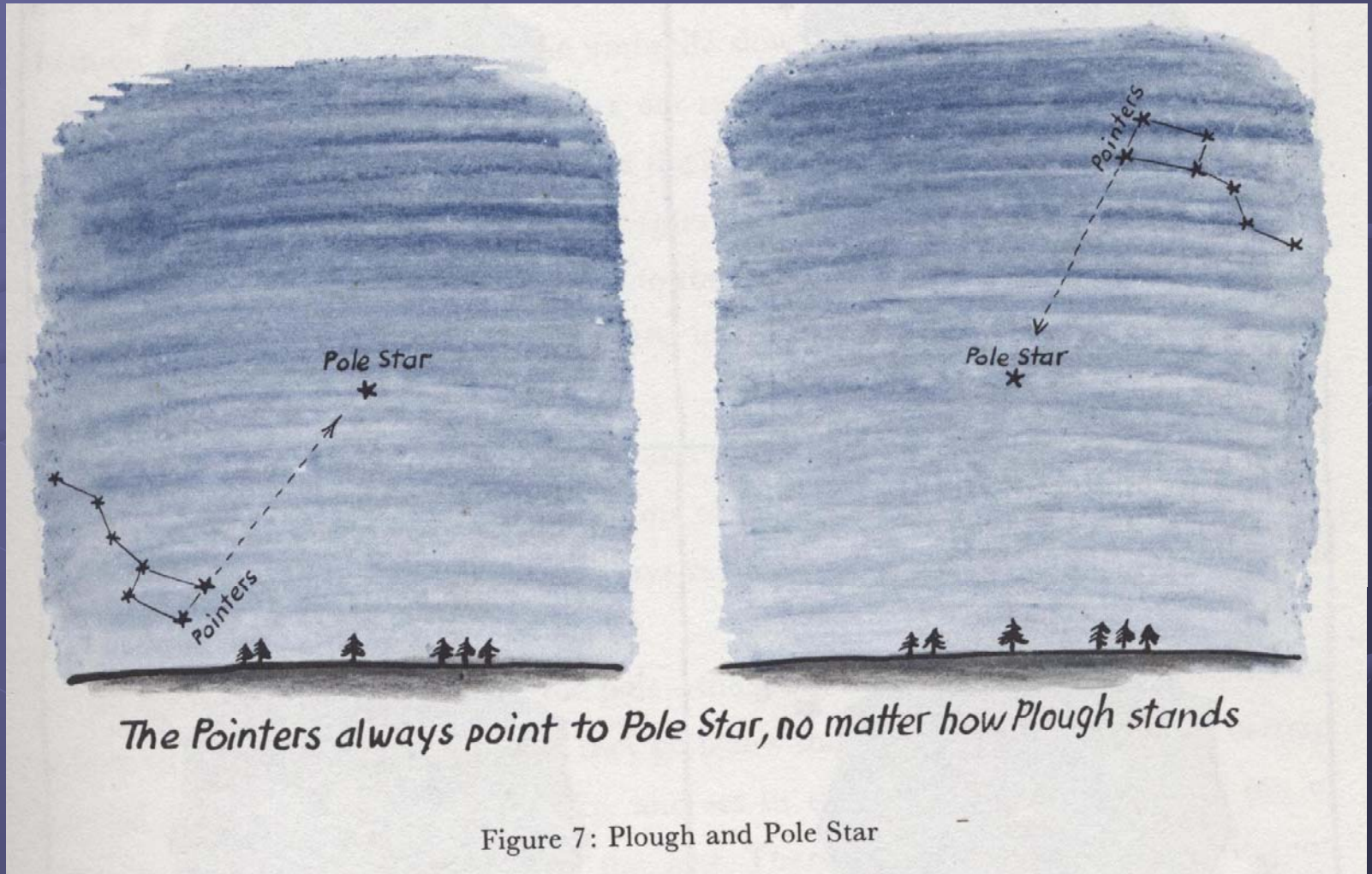
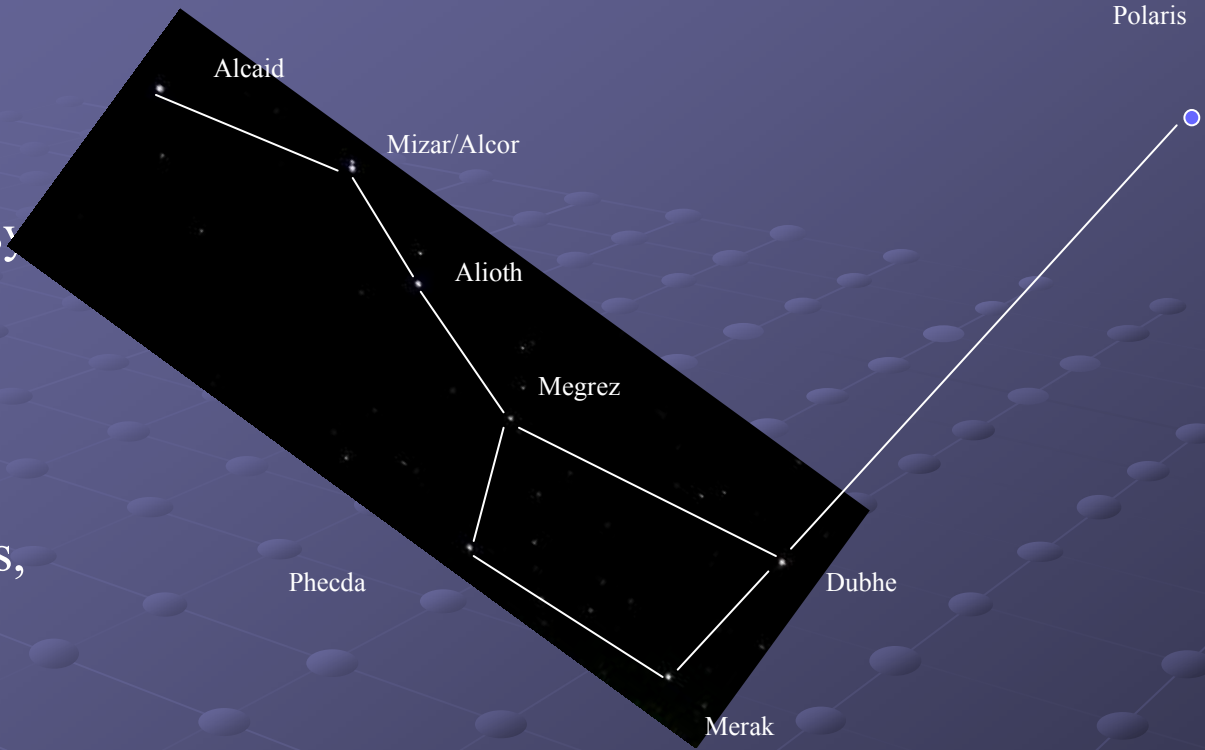


Figure 7: Plough and Pole Star

Finding North

In the Northern Hemisphere, it's easy to find Polaris by following the line traced from Merak to Dubhe (β and α Ursae Majoris, also known as the Pointers), the two stars at the end of the Plough.



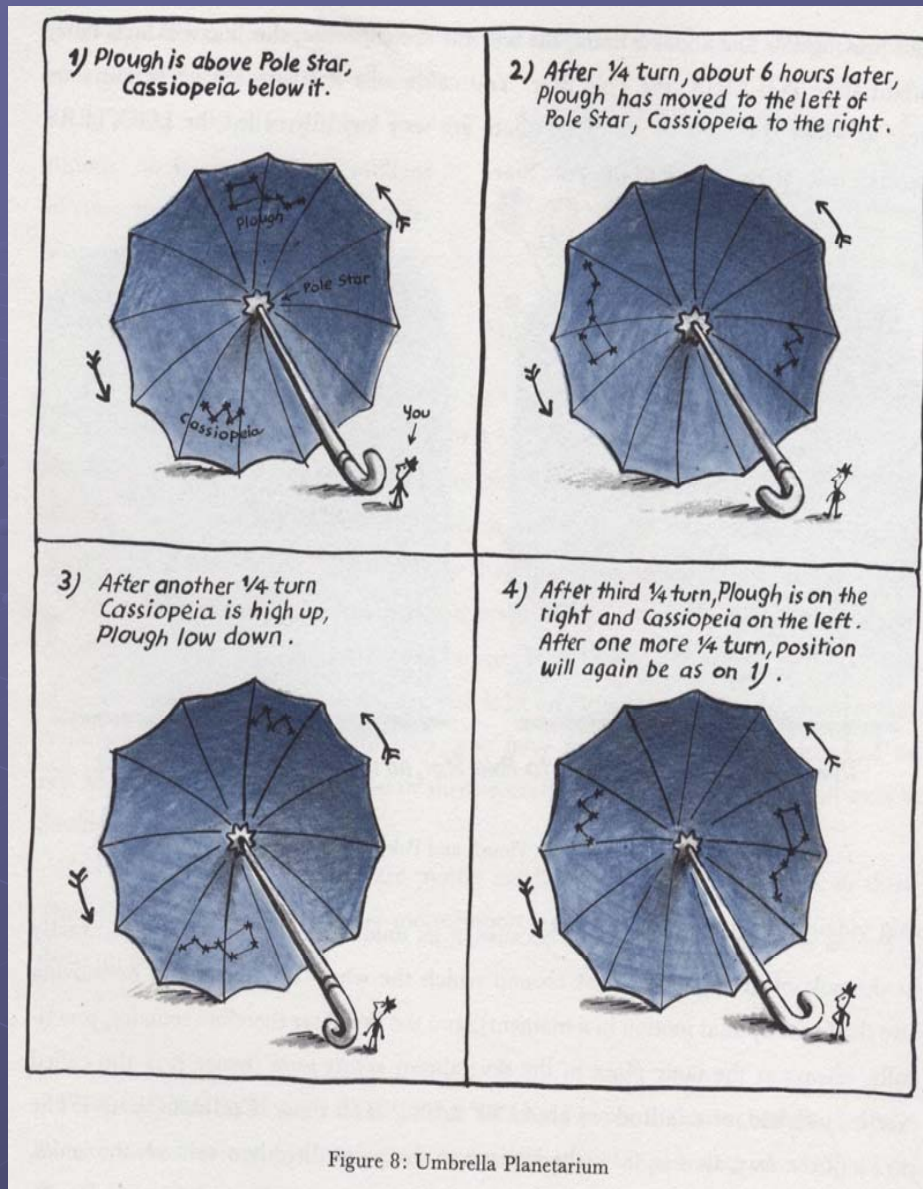
Sun sets in the west

W



E

As the earth rotates through 24 hrs, the stars appear to rotate around a single point which is currently very near Polaris



Acknowledgements – H. A Rey The Stars

Rotation of the Earth and the position of the stars

How we see the sky

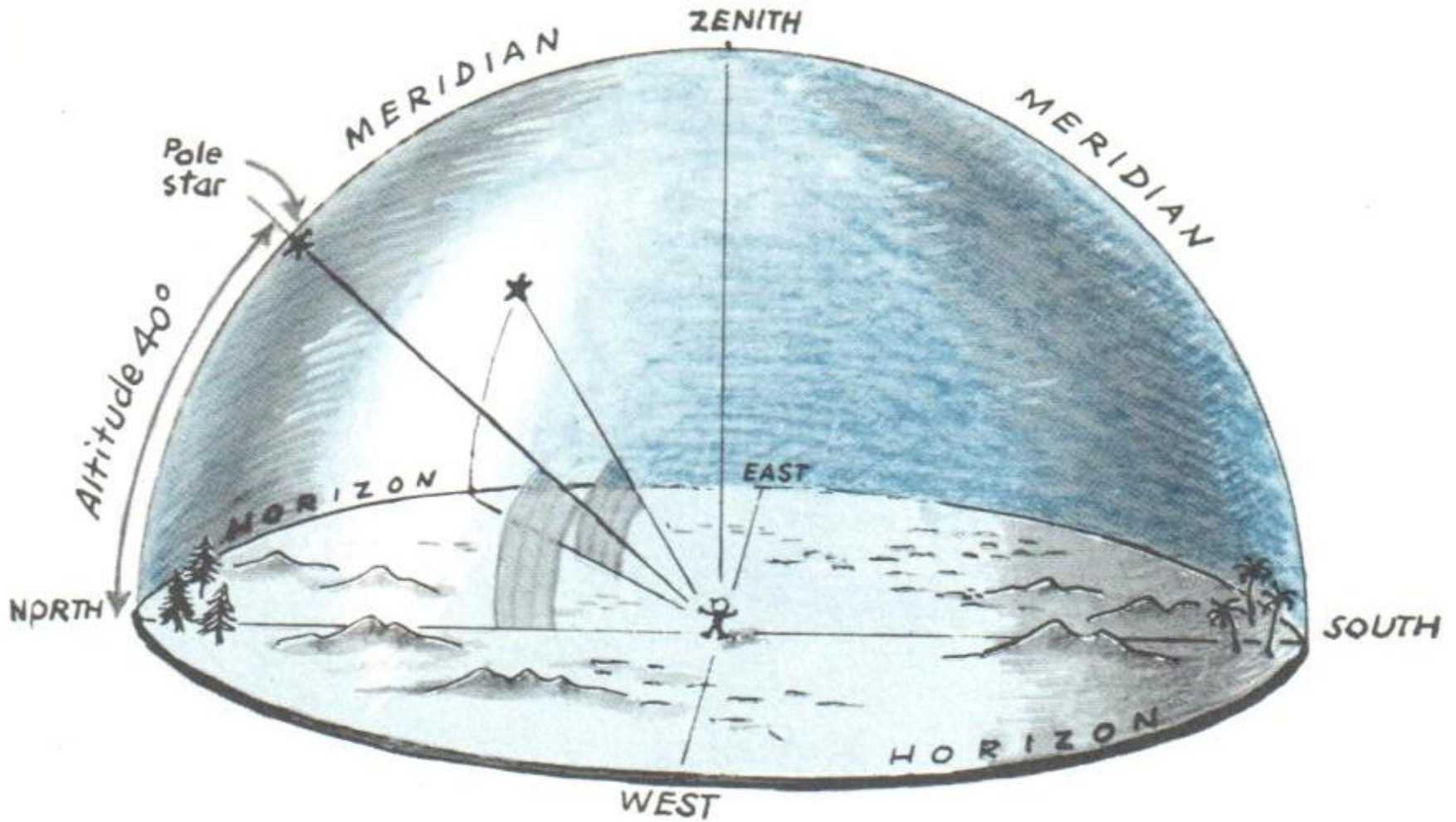


Figure 10: The Sky We See: A Half-Globe

Why we only see some stars

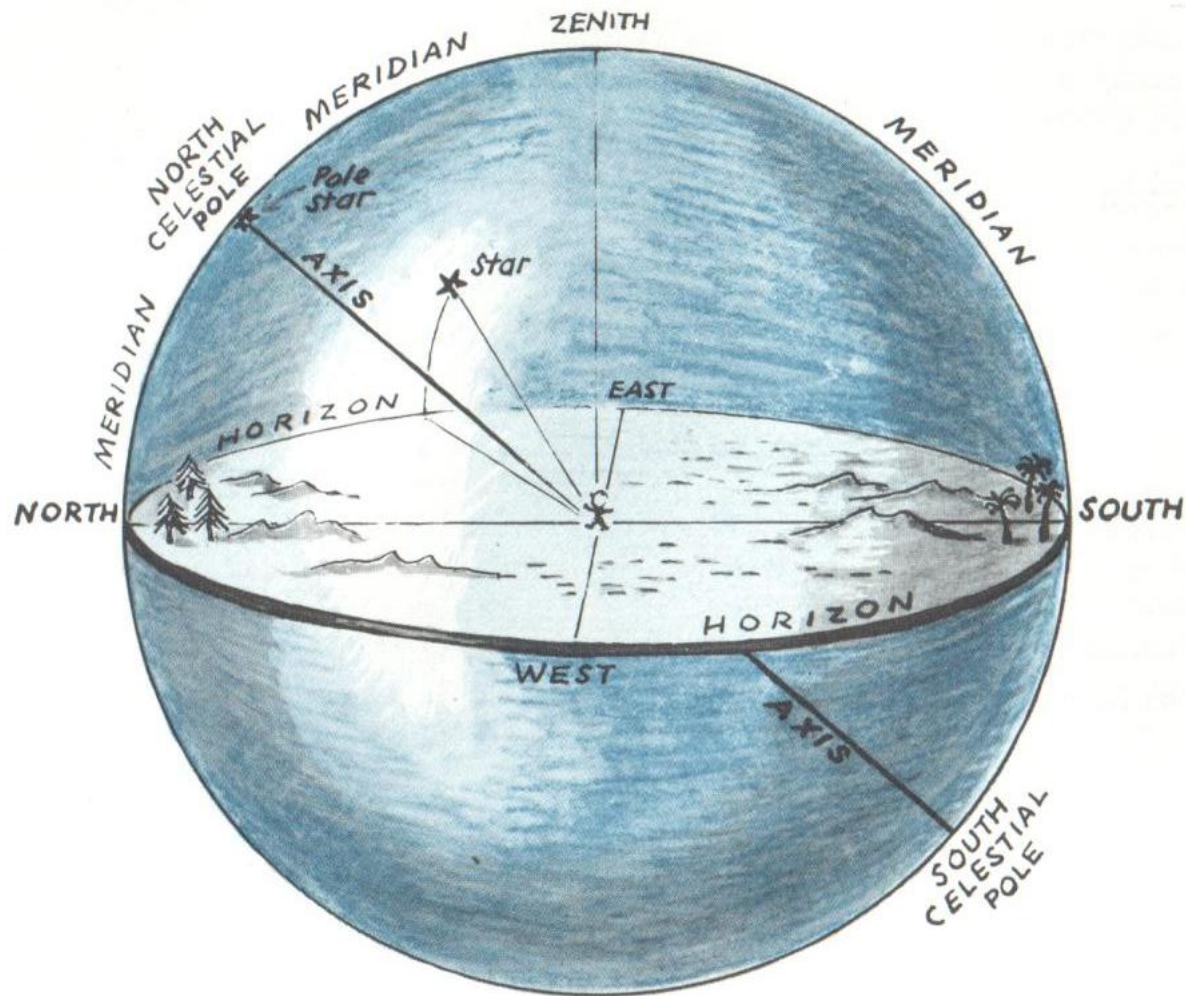


Figure 11: The Sky as a Full Globe

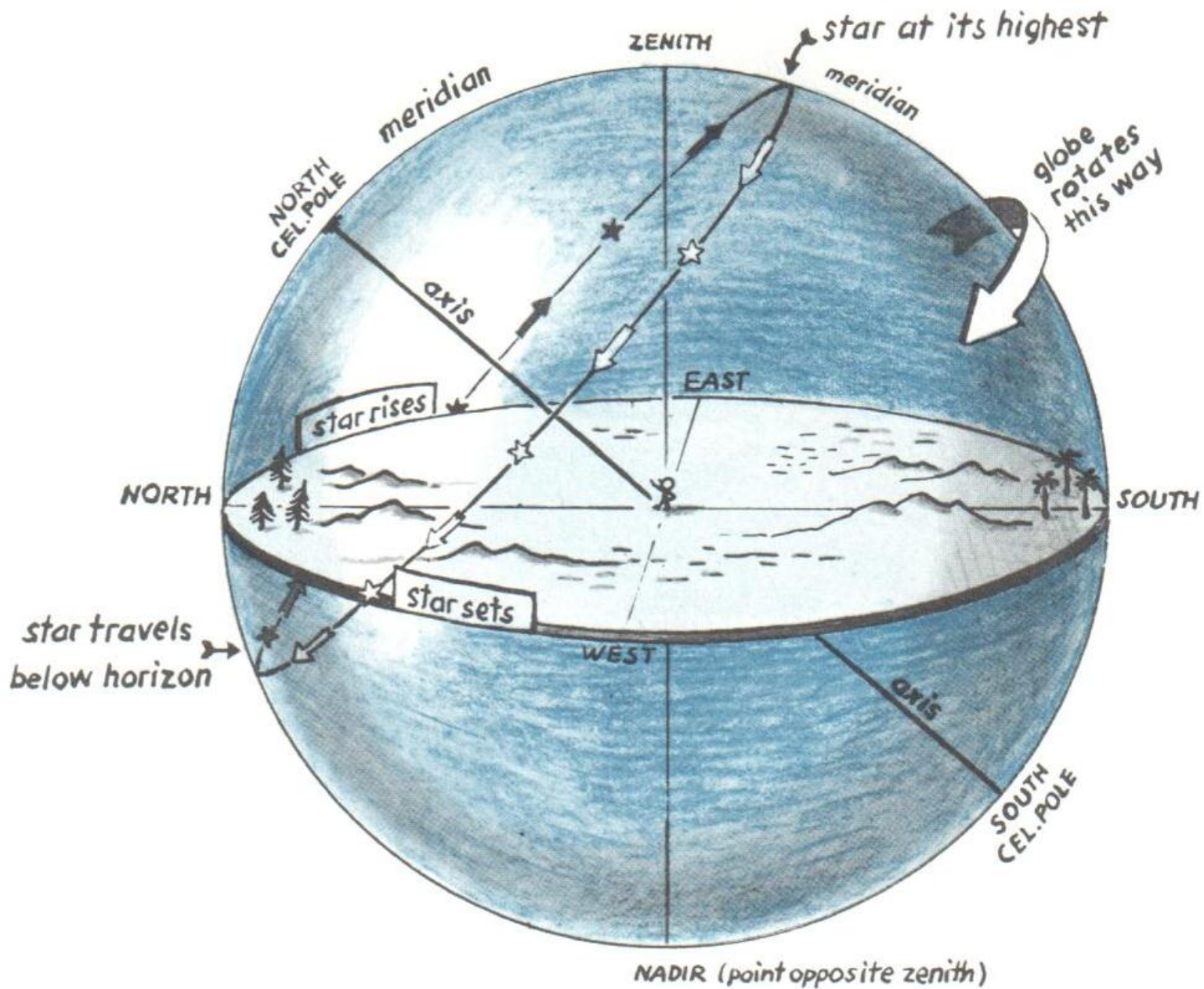


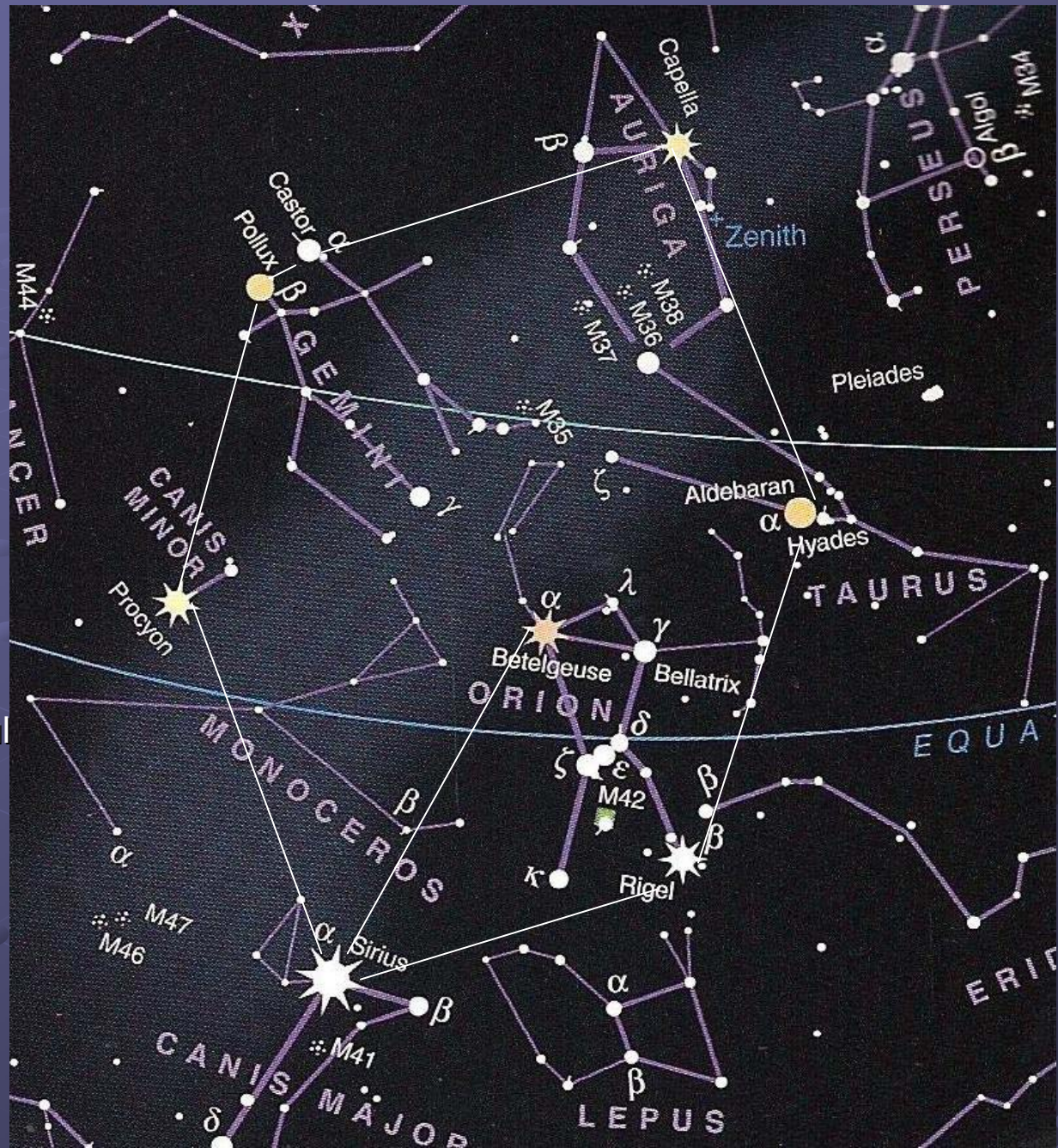
Figure 12: The Sky Globe Rotates

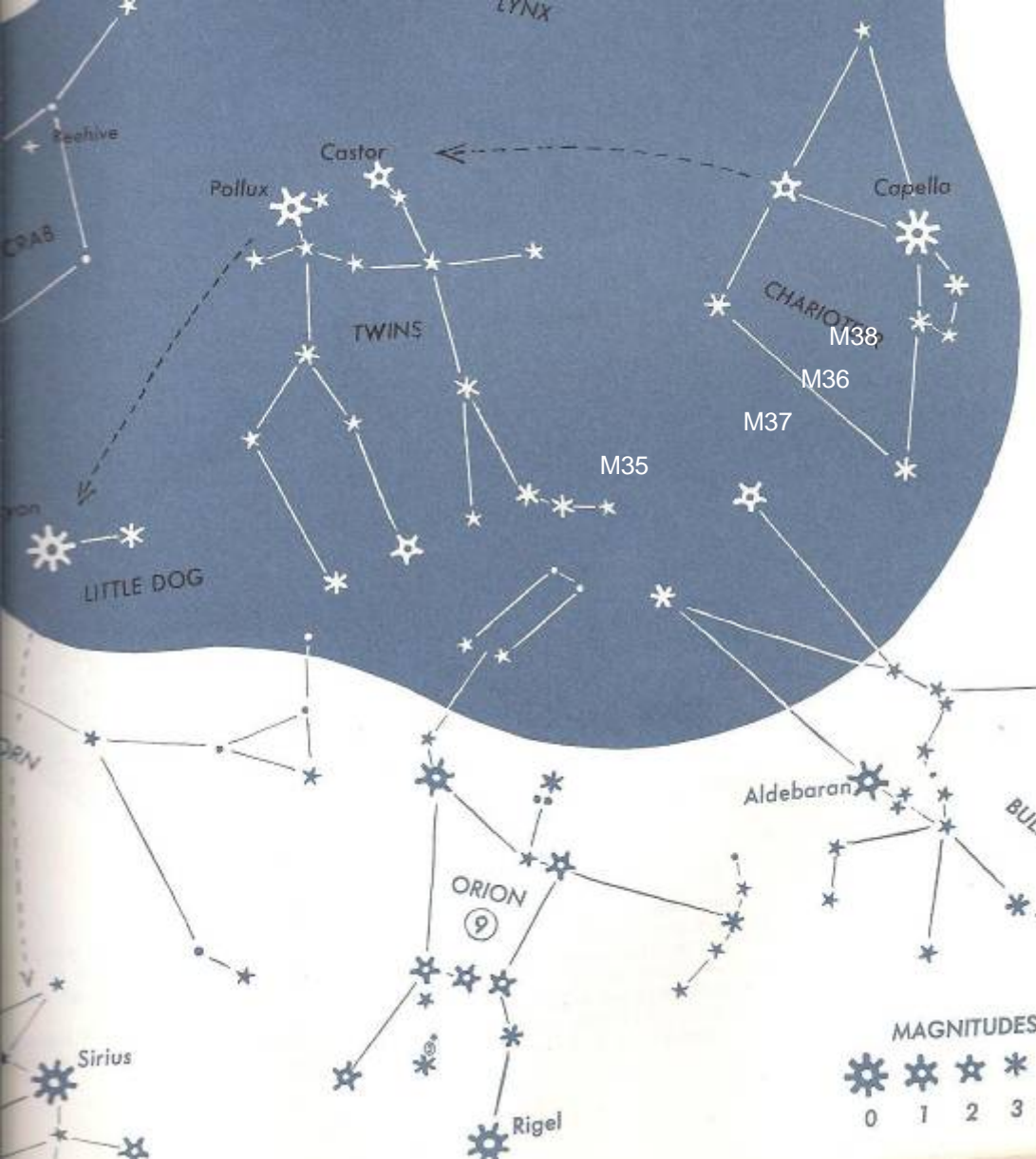
But its not the sky turning, its you

- The Earth rotates, turning towards the east.
- The objects in the sky which are, for our purposes fixed, appear to move up, across the sky and set in the west.
- Demo.

The Winter Hexagon....

- Brightest star in Auriga
- **Capella**
- Name the twins...
- **Castor and Pollux**
- Bright star in the little dog
- **Procyon**
- Brightest star in the sky
- **Sirius**
- Blue white foot of Orion
- **Rigel**
- Bright eye of Taurus the Bull
- **Aldebaran**
- And...the 8th bright star (on Orion's shoulder) – the red giant
- **Betelgeuse**





Auriga – The Charioteer.
Pointed Hat, Large chin.

Gemini – The Twins. Two
matchstick men. Castor is a
multiple star system.

Orion – The Hunter. Belt, Sword
Club and Shield

Taurus the Bull.

Canis Minor. (little dog – pretend
It's a sausage dog!)

The Messier objects 36,
37 and 38 in Auriga
35 in Gemini

Observers section – Loughton List Objects

The Loughton List

An observing guide for
beginners, members and
anyone else out there.....

Version 1.1 – Released June 2011

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Version 1.2 released in September 2011

Free download in .pdf form from the LAS website

The list for tonight



Adobe Acrobat
Document

- Nebulae – M42
- Clusters - Easy
 - M45, Hyades, M34, 35, M36, M37, M38, Col 69, Col 70, Mel 20, The Double Cluster, NGC 1981
- Clusters – Moderate
 - NGC 957, M41, NGC 1647, 7789, the “37” cluster, Stock 2
- Interesting Stars
 - Algol, The Garnet Star, Mizar/Alcor
- Galaxies
 - Bodes and the Cigar
- Asterisms
 - Cheshire Cat, Mini Coathanger, The engagement ring, Kembles Cascade



Thursday 22 September
15:14:56 UT

Moon's Age 24.5 days
(past last quarter)



Next new moon Tue 27 Sep
2011

Current Solar Activity

From NOAA via n3kl.org

Solar X-rays **X CLASS FLARE!**

Geomagnetic Field **QUIET**

Space Weather

- [NOAA Auroral Activity](#)
- [NOAA Current Solar Cycle](#)
- [NOAA Space Weather](#)

Astro News

- [New Scientist Space](#)
- [News Now Astronomy](#)
- [ESA UK News](#)
- [NASA News](#)
- [Physics World](#)
- [ESO \(Atacama Chile\)](#)
- [Sky at Night Magazine](#)

Local Links

- [Theydon Bois Village](#)

Welcome to the LAS website.

The Loughton Astronomical Society is the home of all things astronomical in West Essex. We meet on Thursday evenings between 8:00 and 10:00 p.m. in the Scout Hall, off Loughton Lane, Theydon Bois, Essex (next to the Cricket Club). Guests are always welcome; just drop in to one of our Thursday meetings. Click the "Map" tab above for details of how to find us.

We welcome all levels of experience from the absolute beginner to the experienced astronomer. Our programme includes astronomy, cosmology, stars, planets, space travel, space probes and the universe around us. If you are serious about astronomy or just curious, want to learn or just fill an evening then why not come along and see us. If you would like to look through one of our telescopes then just turn up to one of our observing evenings. Sorry we cannot guarantee the weather.

If you are driving we do have a car park. If you are using public transport then take the Central Line to Theydon Bois and walk across the village green. There are buses from Harlow and Romford. Meanwhile, why not browse around our website?

For our younger observers, aged 6-14, we have a junior section called Astrokyds. This meets every second Friday of the month (except April and August) at 6:30 p.m. in St. Mary's Church Hall, next to the Village Hall. This is also shown on our map. Please bring a responsible adult or guardian with you. Beware, you may find your parents enjoy the evening almost as much as you do.



Next 3 Thursday Evening Meetings

- | | |
|-------------|------------------------------------|
| 22 Sep 2011 | Open – Titbits. |
| 29 Sep 2011 | Open – Observing. |
| 06 Oct 2011 | Malcolm & Steve(?) – Autumn Skies. |

* Outside Speaker

Other Astronomy Events Coming Up

- | | |
|-------------|---|
| 29 Sep 2011 | Opposition of Uranus |
| 08 Oct 2011 | Draconid Meteor Shower - Observing at Scout Hall - Open To Visitors |

The Loughton List

Download the latest version 1.2 (September 2011) of the Loughton List here. Just click on the link below.

- [Loughton List V1.2 Download →](#)
- [New Loughton List Web Page →](#)

On the Gallery Page





Welcome to the Loughton List Page

An observing guide for beginners, members and anyone else out there...

The Loughton List is both a list and a document crammed with observing information. The objects chosen for this list are all visible in real UK skies. You don't need to go to some far off mountain top to see these objects.

There are three categories. The "Bronze" objects are easy to find and easy to see. You do not need expensive equipment. The "Silver" objects provide just a little more challenge but should be within most peoples grasp. The "Gold" objects need a bit more patience and a reasonable telescope.

Theydon Bois (London)

- But I am a long way from Theydon Bois (London). ▶
- Download Version 1.2 of the Loughton List here ▶
- Not sure what to observe - Try our lucky dip. ▶
- Or just go for tonight's LAS Meridian Challenge. ▶

To update the sky chart on the right use the simple control panel at the bottom of the page. If you want to see the sky for other dates and times or want a larger chart, then click the link to our Full e-Sphere Control Panel below.

Go to Full Loughton List e-Sphere Control Panel ▶

e-Sphere Controls

Select Time in UT

- 17:00
 18:00
 19:00
 20:00
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 24:00
 01:00
 02:00
 03:00
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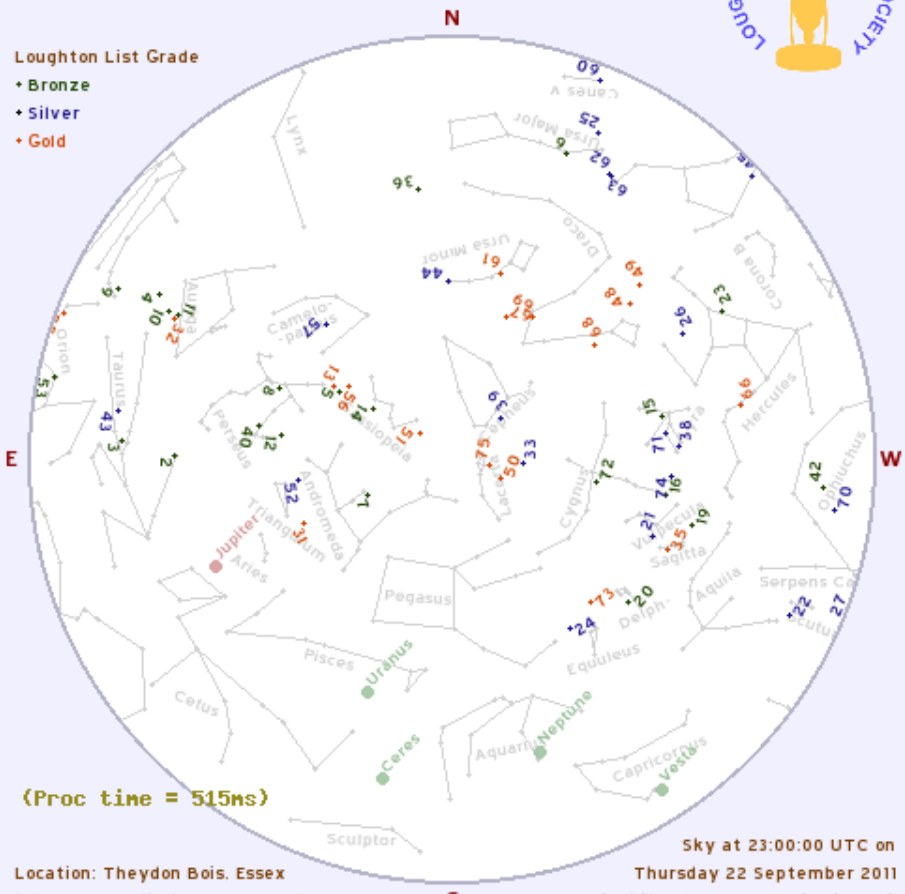
Select Grade of Object

- Bronze
 Silver
 Gold
 All

LAS Theydon Bois, Essex
<http://las-astro.org.uk>
 Home of Astronomy
 in West Essex.

The Loughton e-Sphere

Your Online Electronic Sky Guide
 Natural Horizon View



So.....

- Find North and orientate yourself
- Follow the winter hexagon
- Learn the star names.
- If you have binoculars or small telescope use the Loughton List!
- Next..... We will cover basic instruments, observing tips, equipment and books.