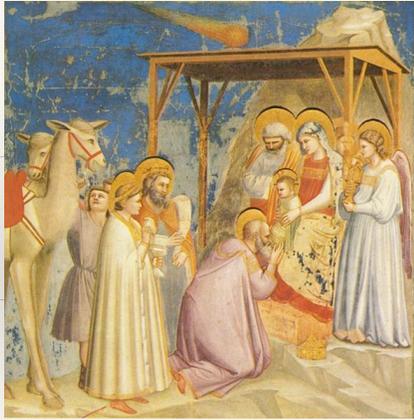


# Art and the Cosmos

Sandra Paikowsky (Concordia University)  
Peter Watson (Carleton University)



Night hides the world,  
but reveals a universe.

Persian proverb

# Art and the Cosmos

- ❖ The Dome of Heaven: Astronomy and Art
- ❖ Star Maps and Star Ceilings
- ❖ Comets
- ❖ Aurora and Eclipses
- ❖ Galaxies and the Milky Way
- ❖ Space Travel

If the stars should appear but one night every thousand years  
how man would marvel and stare. Ralph Waldo Emerson



Credit: ESO, Stefan Gillessen (MPE), F. Eisenhauer, S. Trippe, T. Alexander, R. Genzel, F. Martins, T. Ott

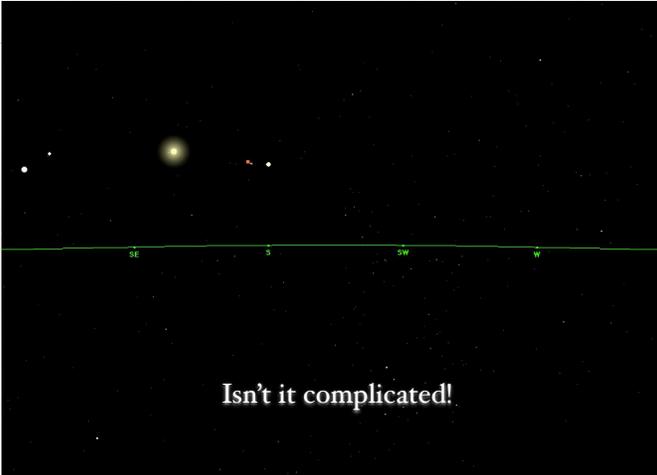
Sky view : Stars seem to rotate in circles, centred on the North Celestial Pole



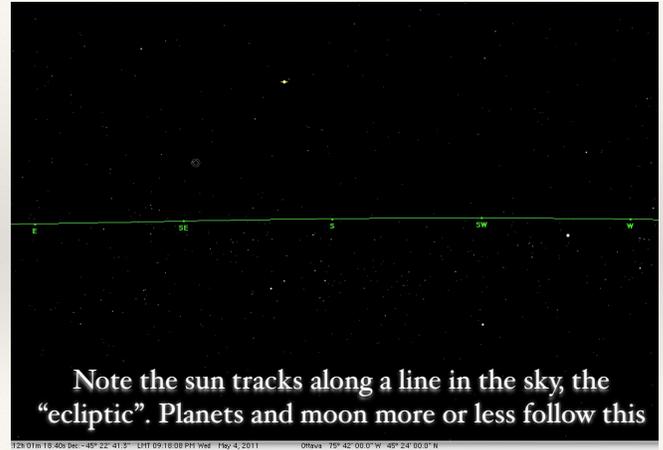
Lets turn off the sun, and track the planets now



Stars near the equator set 4 minutes earlier each night.



We can make things a bit easier by freezing the stars and always looking South

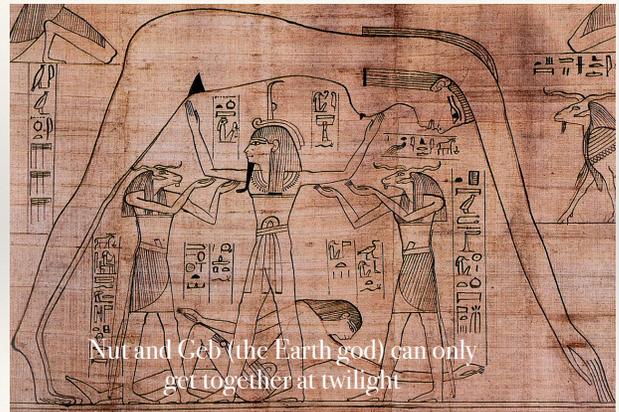


Humans do not like randomness! We see patterns where there are none

Our patterns become gods and legends



Sometimes for the whole sky: Nut

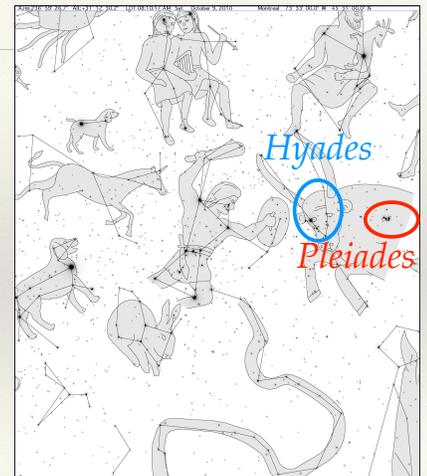


Wikipedia

## Orion and Neighbours



Everything looks worse in black and white



Maybe but it is easier to understand!

# Green Grow the Rushes, Oh

I'll sing you twelve, Oh  
Green grow the rushes, Oh  
What are your twelve, Oh?  
Twelve for the twelve Apostles  
Eleven for the eleven who went to heaven,  
Ten for the ten commandments,  
Nine for the nine bright shiners,  
Eight for the April Rainers,  
Seven for the seven stars in the sky,  
Six for the six proud walkers,  
Five for the symbols at your door,  
Four for the Gospel makers,  
Three, three, the rivals,  
Two, two, the lily-white boys,  
Clothèd all in green, oh, oh  
One is one and all alone  
And evermore shall be so.

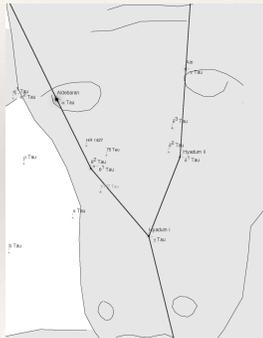
# Maybe

*April Rainers*, = Hyades  
Start of the Rainy Season in Mediterranean

*seven stars in the sky*, = Pleiades  
Start of the sailing season in the Med.  
"Plein" = to sail

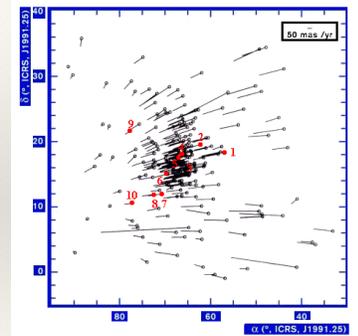
# Hyades?

Nymphs, sisters of Hyas: overcome by grief when he was killed  
Placed in the sky still weeping...  
hence April rainers



How do we know they are a cluster, as opposed to just a random bunch of stars?

They are moving to the same spot in the sky, like a flock of geese!



# The Stars/Pleiades



# The Stars/Pleiades

- ❖ The best known cluster: in all ~50 stars.
- ❖ About 20 million years old
- ❖ Nebula is just chance cloud of dust
- ❖ Very close: about 10 parsecs ~ 40 light-years

# Babylon?

- ❖ Most detailed ancient observations.
- ❖ Star Catalogs 1600 BC.
- ❖ Eclipse Observed 1500 BC.
- ❖ Continuous Records 900 BC.
- ❖ Records on stone/clay tablets.

# Babylon: Mul Apin tablet

On the 1st of Ayyaru the Pleiades become visible.  
On the 20th of Ayyaru Taurus becomes visible.  
On the 10th of Simanu Orion of Anu and Gemini become visible.  
On the 5th of Du'uzu the Little Twins and the Crab become visible.



[http://www.mesopotamia.co.uk/astromer/explore/exp\\_set.html](http://www.mesopotamia.co.uk/astromer/explore/exp_set.html)

# Bible

## Amos

5:7 Ye who turn judgment to wormwood, and leave off righteousness in the earth,  
5:8 Seek him that maketh the seven stars and Orion, and turneth the shadow of death into the morning, and maketh the day dark with night: that calleth for the waters of the sea, and poureth them out upon the face of the earth: The LORD is his name:

## Job:

9:8 Which alone spreadeth out the heavens, and treadeth upon the waves of the sea.  
9:9 Which maketh Arcturus, Orion, and Pleiades, and the chambers of the south.

# Nebra sky disk

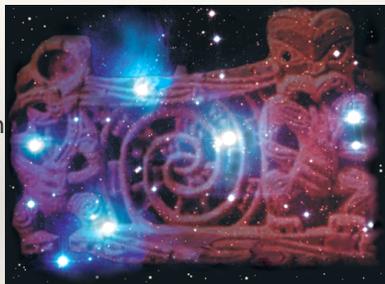


Bronze disk of ~30 cm diameter , ~2.2 kg, ~ 1600 BC  
Gold symbols: star cluster interpreted as the Pleiades).

Wikipedia

# Taatai Arorangi (Maori Astronomy)

- ❖ Stars are guarded by Star fairies
- ❖ One polished his star so much that the others became jealous, chased him and threw a stone which broke it in seven pieces
- ❖ Hence the Matariki (the Pleiades)



Kay Leather and Richard Hall

# e.g. Orion



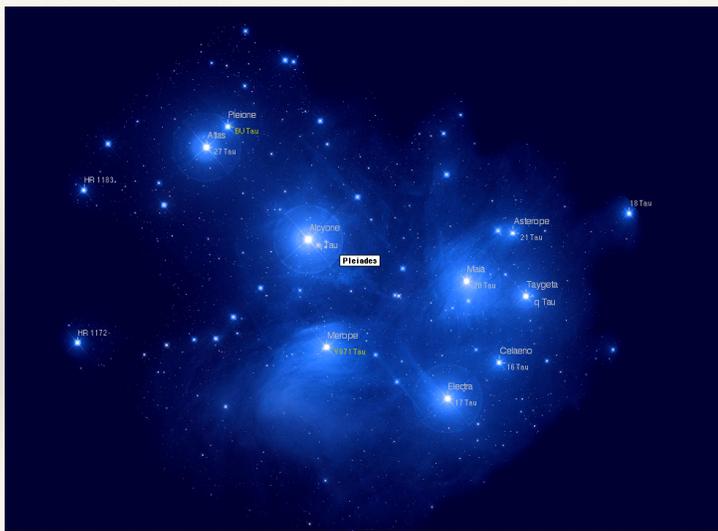
- ❖ Appearance of Matariki (the Pleiades) marks the beginning of the New Year.

- ❖ Note complex mythology hides a **HUGE** practical application to navigation
- ❖ "If you sail for Kahiki (Tahiti) you will discover new constellations and strange stars over the deep ocean. When you arrive at the Piko o Wakea you will lose sight of Hokupaa (North Star), and the Newe (Southern Cross) will be the southern guiding-star, and the constellation of Humu will stand as a guide above you." Kamakau quoted by Percy Smith 1851



## Pleiades in Greek mythology

Seven sisters: Maia, Electra, Alcyone, Taygete, Asterope, Celaeno and Merope.  
 Parents were Atlas, (Titan who held up the sky), Pleione, (protectress of sailing).  
 Orion, pursued them and their mother over the face of the Earth.  
 Zeus turned them into a flock of doves, which he set in the heavens.



## Seven sisters but.....

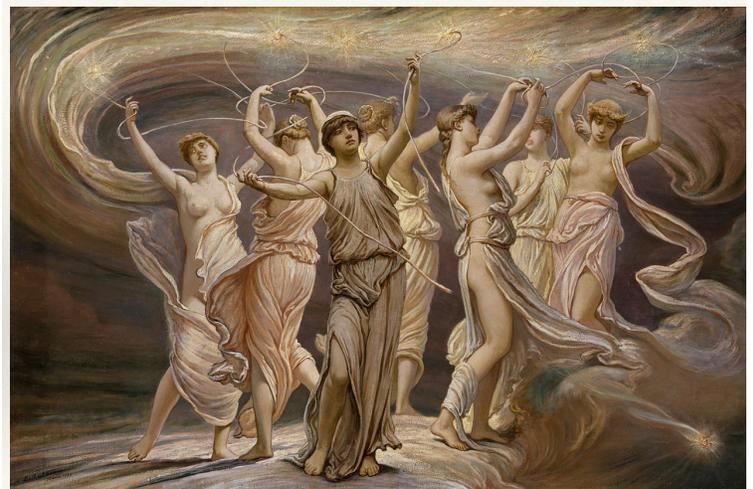
Merope married a mortal (Sisyphus) and so faded away so we only see 6 today



Wikipedia

## In Japanese

Subaru (!): 5 stars that merged into 1



Pleiades (1885) Eilhu Vedder

## WHAT IS ART HISTORY?

WHAT IS IT: object type, date, medium, size, location (original and current)

WHO MADE IT: artist, historical style, time period, geographical location, patron/owner

WHAT DOES IT MEAN: subject matter/content, visual forms (composition, colour, light, line, space), iconography, contexts (historical, societal, symbolic), other works by artist and/or contemporaries



Michelangelo, *Creation of the Sun, Moon and Planets*, 1508-12, fresco, 9' 2in x 18' 8in. Sistine Chapel, Vatican

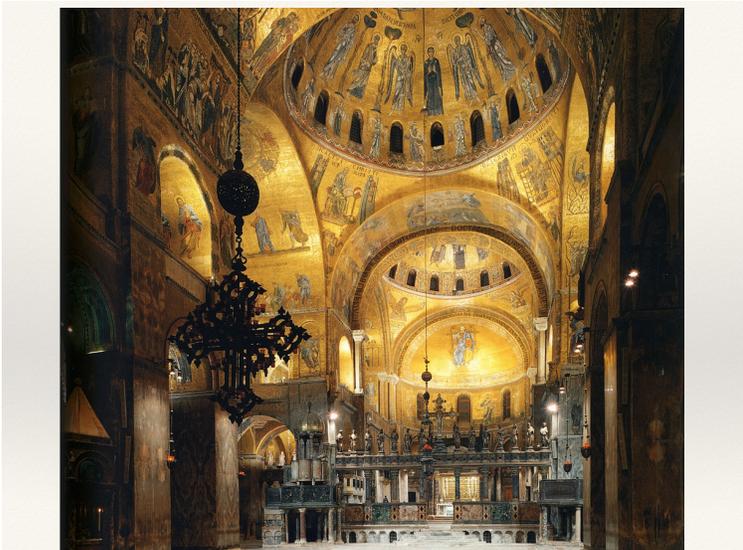
## THE DOME OF HEAVEN

Pantheon, Rome, c.125 CE  
(Church of St. Mary and the Martyrs), 608



## THE SAINTLY DOME

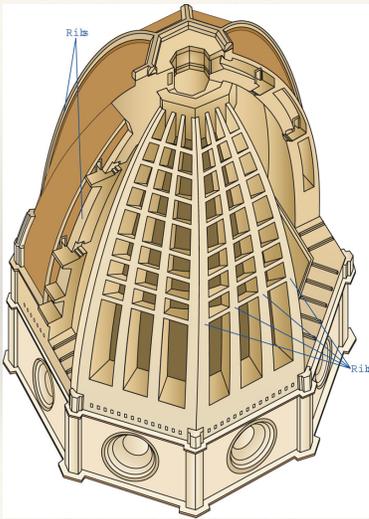
Basilica San Marco  
Venice



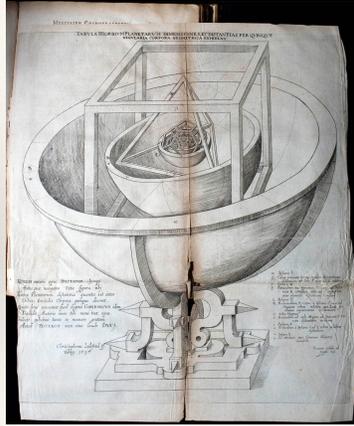
Filippo Brunelleschi  
Dome of the Cathedral  
Florence  
(Santa Maria del Fiore,  
il Duomo)  
1446-ca.1461



Diagram of Ribs in Brunelleschi's Dome,



Kepler's Nested Model of the Universe



Interior of Brunelleschi's Dome, Florence

*The Last Judgement* begun by Giorgio Vasari in 1568 and completed by Federico Zuccari, 1579

Detail of *Last Judgement*: Christ with the Virgin Mary, St. John the Baptist and Adam and Eve



### THE DOME CONTINUED...



Michelangelo's Dome 1547-64; completed by Giacomo della Porta and Domenico Fontana in 1590  
St Peter's Basilica, Rome



Father Paul Bellot  
St. Joseph's Oratory, Montreal  
Dome 1937-39

### THE DOME of HEAVEN COMES INSIDE



Antonio da Correggio, *Assumption of the Virgin*, 1526-30, fresco, Cathedral, Parma

Fra Andrea Pozzo, *Glorification of St. Ignatius*, 1691-94, fresco, Church of San Ignazio, Rome



Giambattista Piazzetta  
*Glorification of St. Dominic*  
1725-27, oil on canvas  
Santi Giovanni e Paolo  
(San Zanipolo), Venice



## A LITTLE LESS DIVINE

Andrea Mantegna  
*Camera degli Sposi*, 1465-74, fresco  
Ducal Palace, Mantua



## RETURN to the CLASSICAL PAST

Paolo Veronese  
*Gods of the Sky*  
Ceiling fresco, 1560-61  
Sala dell'Olimpo,  
Villa Barbaro, Maser

