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The Medieval Dark Sky





*If the stars should appear one
night in a thousand years, how
would men believe and adore! ...*

*But every night come out these envoys
of beauty and light the universe with
their admonishing smile.*

Ralph Waldo Emerson, 1836



But for how
much longer?

The spectacle of vast numbers
of stars

(as seen from the time when the
earliest inhabitants of the planet
looked up to the skies)

is becoming increasingly
obstructed from view - by the
growing light pollution of the
'civilised' world

Overview:

**Medieval and
Renaissance perceptions
of the dark sky as
essential backstory
to the protection of
the Dark Sky**

- When and how did this happen?
- When and why did people stop looking upwards?
- Contemplation of stars, planets and galaxies as inspiration of religions, philosophies, myths and legends
- Ancient Greeks, medieval Europe, industrial age and our own times
- Grasping the complexities of the universe leading to scientific theories
- Yet - science is removing astronomical phenomena from common sight



Our Universe sprouted from an initial event, the 'big bang' or 'fireball.' It expanded and cooled: the intricate pattern of stars and galaxies we see around us emerged thousands of millions of years later.

On at least one planet around at least one star, atoms have assembled into creatures complex enough to ponder how they evolved.

Martin Rees, *Before the Beginning* 1997

Visual Images

... as an
indication
(index?) of the
fascination with
the night sky

- Historical overview: Classical, Byzantine
- Medieval artists' impressions of heaven and the night sky
- Focus on depictions of the Milky Way
- Legacy and later examples

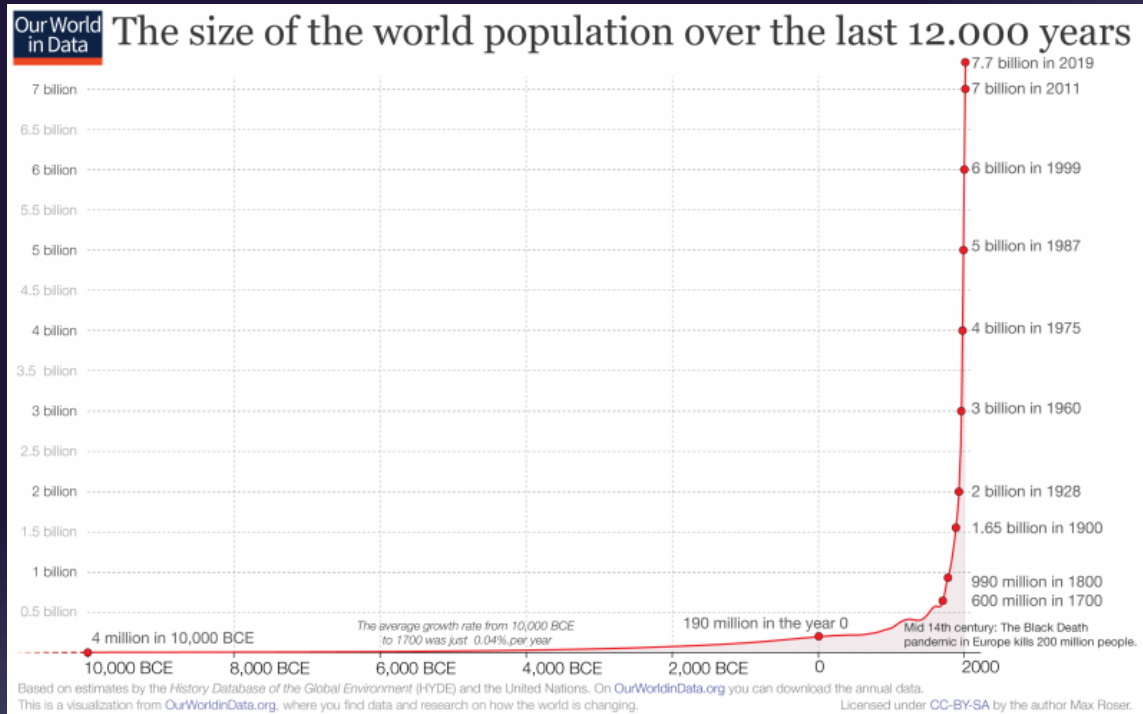
An aerial night photograph of a city skyline, likely Los Angeles, with numerous skyscrapers and city lights. A large, dark, semi-transparent circular overlay is positioned on the left side of the image, containing white text. The text is arranged in three main sections: a title, a quote, and a historical anecdote.

Focus on our Galaxy – the ‘Milky Way’

*‘The Milky Way is no longer visible
to one third of humanity -
including 60 percent of Europeans
and 80 percent of Americans’*

During a 1994 blackout, L.A.
residents called 911 emergency
number when they saw the Milky
Way for the first time

World population and light pollution



Monaco - < square mile, pop 37,500

Familiarity with night sky: Babylonia, Egypt



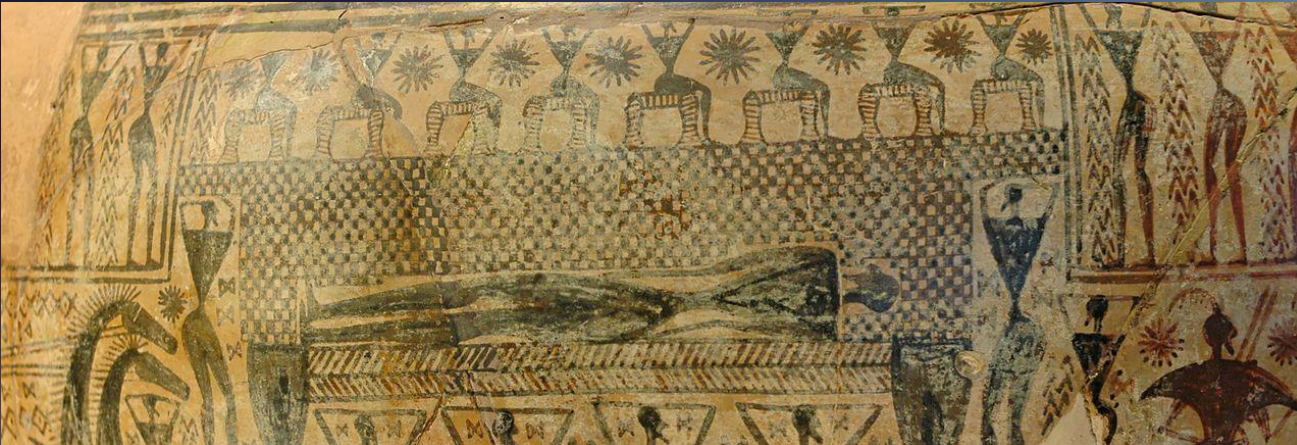
Sky goddess Nut (as 'Milky Way')

Boundary stone
Babylonian c 1125-1104 BC

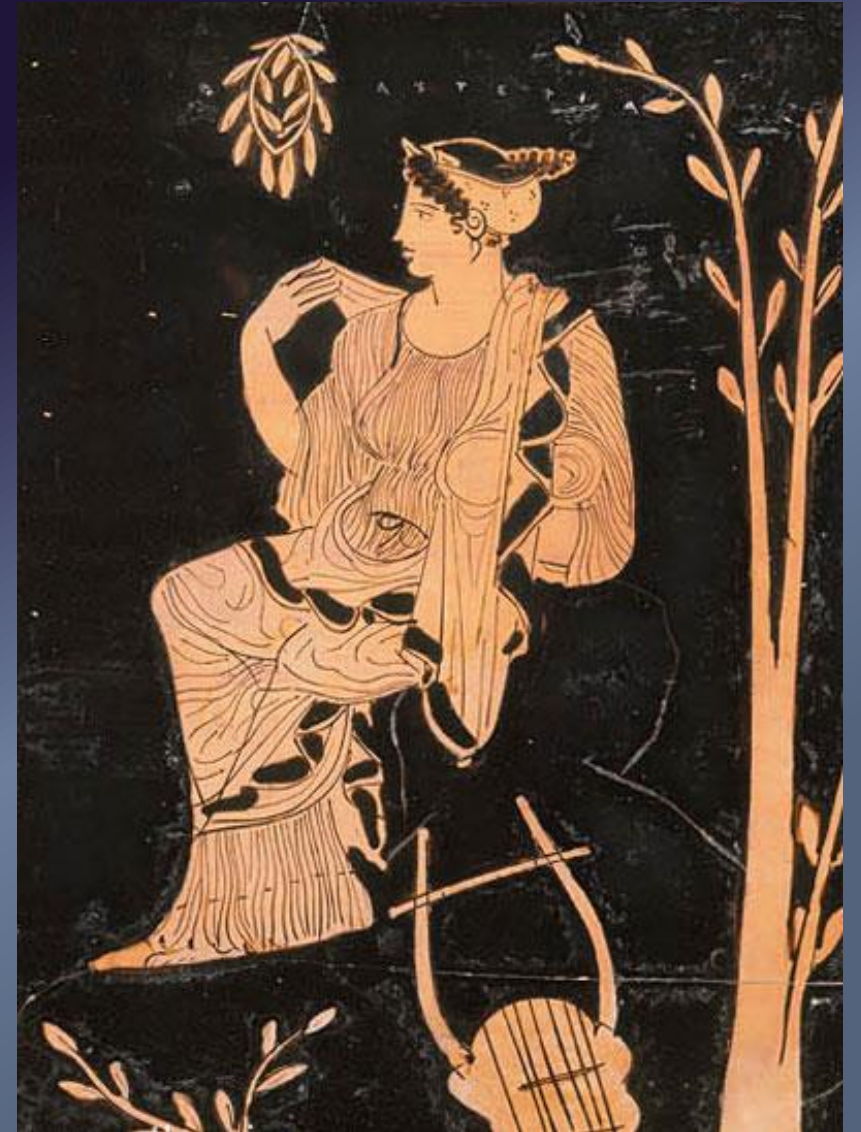


Greece

None of the accounts ... concerning the Universe would ever have been given if men had not seen the stars or the sun or the heaven. ... the vision of day and night and of months and circling years has created the art of number and has given us not only the notion of Time but also means of research into the nature of the Universe. Plato, *Timaeus*, 47 A-B



Detail of Vase, late Geometric, c. 750 BC



Asteria - Goddess of falling stars and night
5th century BC

... and Rome



Ancient settlements, Greece, Rome: rush lights, torches, oil lamps

Population Education - <https://vimeo.com/130468614>

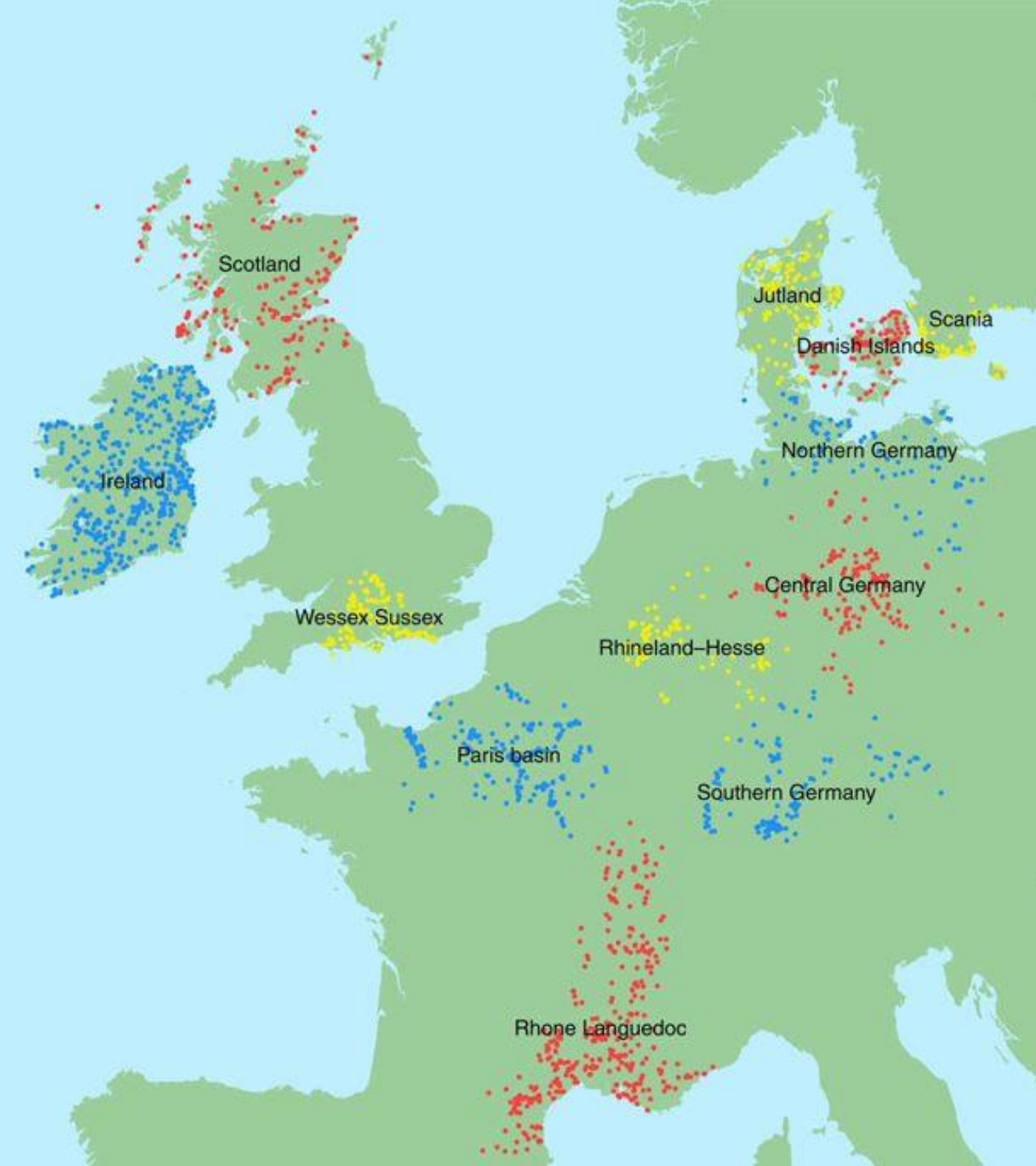
Cicero (2nd century) - after death: 'to inhabit ... that circle that shines forth among the stars which ... the Greeks call the Milky Way' (*Scipio's Dream*)



Hadrian Silver Denarius (Pleiades)
115-28, BNK,R.404 (BM)

... and Northern Europe

- Archaeological sites (40,000 – 800 BCE) as indication of population
- Dark sky crucial for civilisation – from myths, legends to building and orientations (Stonehenge)



Map: S Shennan, et al. (2013), *Nature*, vol 4, no 2486

Early
medieval

Norse



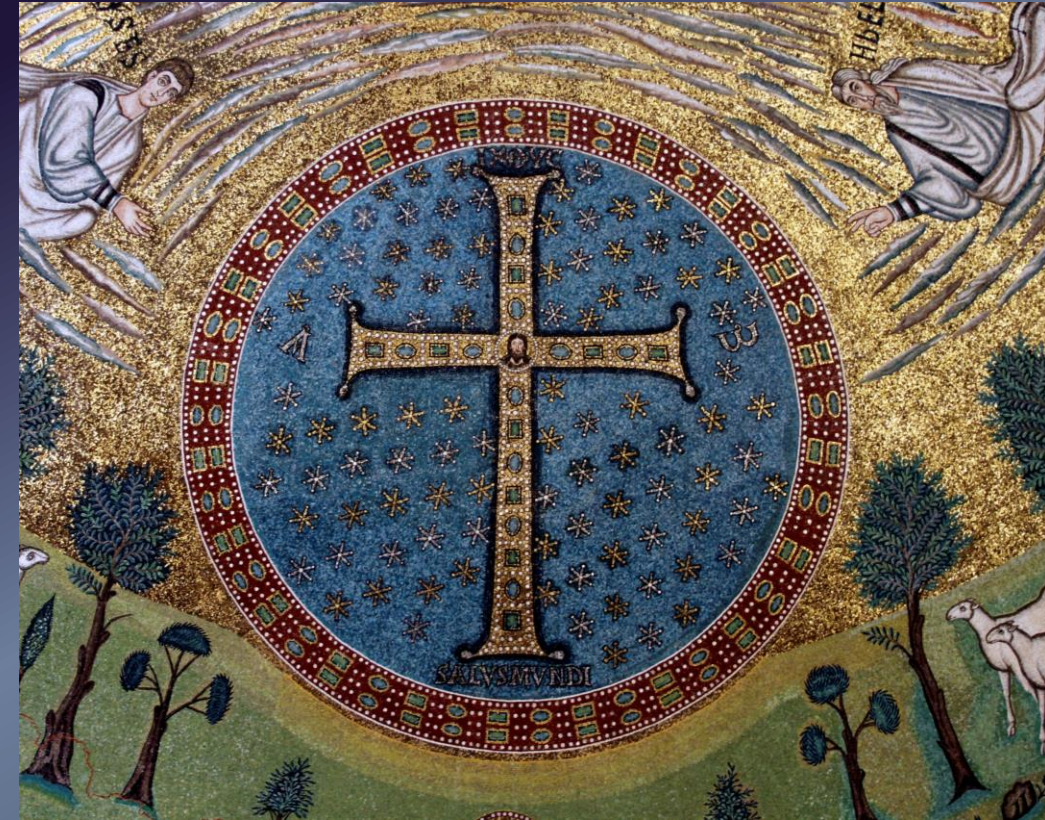
Body-parts of the slaughtered Ymir '...thrown into the sky to make the sun and moon and stars and planets'

Poetic Edda, 13th century (from earlier tradition)

Judaeo-Christian - *And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also (Genesis 1:16)*



The Mausoleum of Galla Placidia, Ravenna - 425



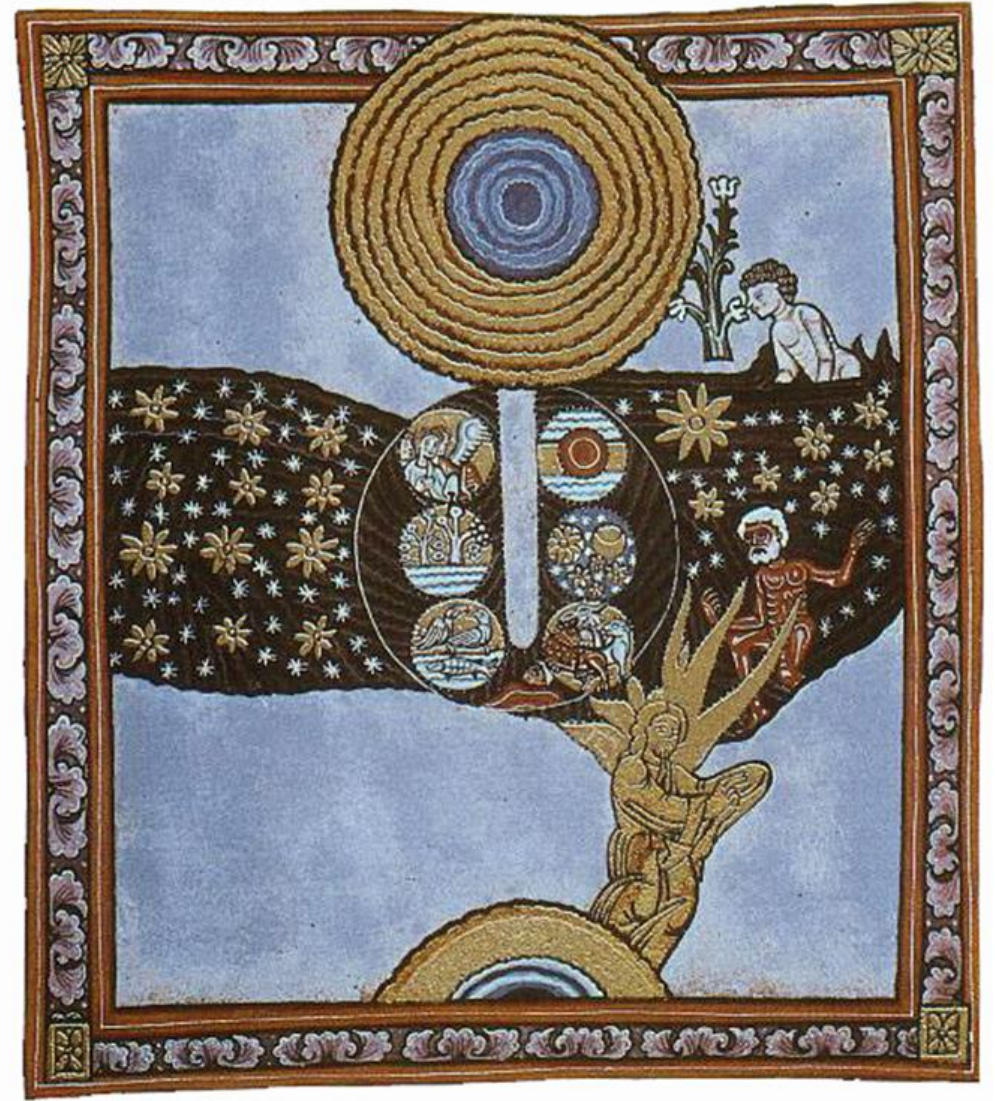
S Apollinare in Classe
Ravenna
7th century



Judaeo-Christian art and architecture (from 12th century)



Monreale, Sicily *God Creating the Universe*, 1180s



Hildegard of Bingen, *Six days of Creation*
Scivias 12th century



St Sever Apocalypse, 1028-72

- Mythology attached to the stars and Milky way – ubiquitous and demonstrates familiarity
- From ancient Egypt, Greece, Rome, Armenia, Viking, Hindu, Irish to Maori, Cherokee, aboriginal





St Mark's Venice *Ascension Dome*

12th century

‘Arc en ciel’ – or milky way?



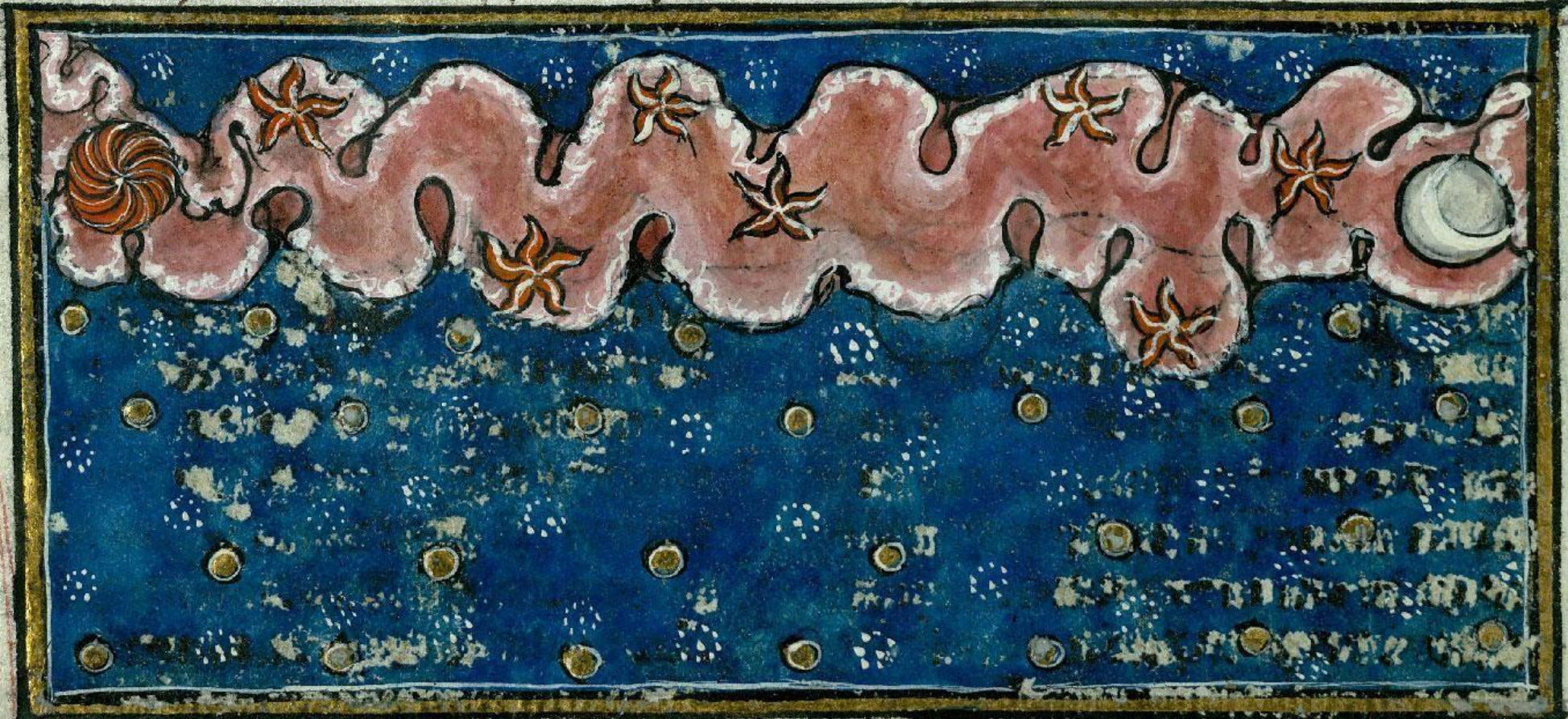
Via Lactea, Cod. Pal. germ. 832
(1491) Heidelberg



Milky Way as Circle of Stars (11th century)
Biblioteca Nacional de Espana, Madrid (A 16, fol 68v)

cetera corpora stellarum plus solito leuia
ascendunt. Si item ad nutum suum pl^u

dio. Si quibus ita esse vult sit calderis tam
aliter visum. ex hoc quod dicemus.



Sol mercurius et venus ita
iuncti sunt quod in eodem spatio
temporis. Cum anno illius venimus ne

des de naturali quia desolari. Circul^o
vero mercurij superioris pro sui misereat
veniem. Si inferior solant. Circul^o aucto

Matfré Ermengau of Béziers,
Breviari d'Amour
 Spain (Catalonia)
 last quarter of 14th century
 (British Library)





Macrobius, Commentary on Cicero's
Dream of Scipio (meeting his
ancestors in the 'Milky Circle')

Bologna c.1383

Lat. 256, fol. iv, Oxford, Bodleian Library

Macrobius (5th century),
Commentary on Cicero's *Dream of Scipio*

*Comentum Macrobiani Ambrosii in
somnia Scipionis*, Italian, 1469
Houghton Library, Harvard



Giotto, Arena Chapel, Padua, 1305





Collegiate Church of Santa Maria Assunta, San Gimignano, frescoes on vault, mid-14th century

Basilica of St Francis of Assisi built from 1228; frescoes of upper church (early 14th century)



Siena Cathedral:
Nave mid 14th century; Dome late 15th century

Northern Europe



Freibourg
Cathedral
14th century

Ste Chapelle upper level, Paris, 1248 (restored 1836)



Population growth and lighting

1417 - London first organised lighting of streets (Mayoral decree)

1802 - more efficient coal-fueled lighting (William Murdoch)

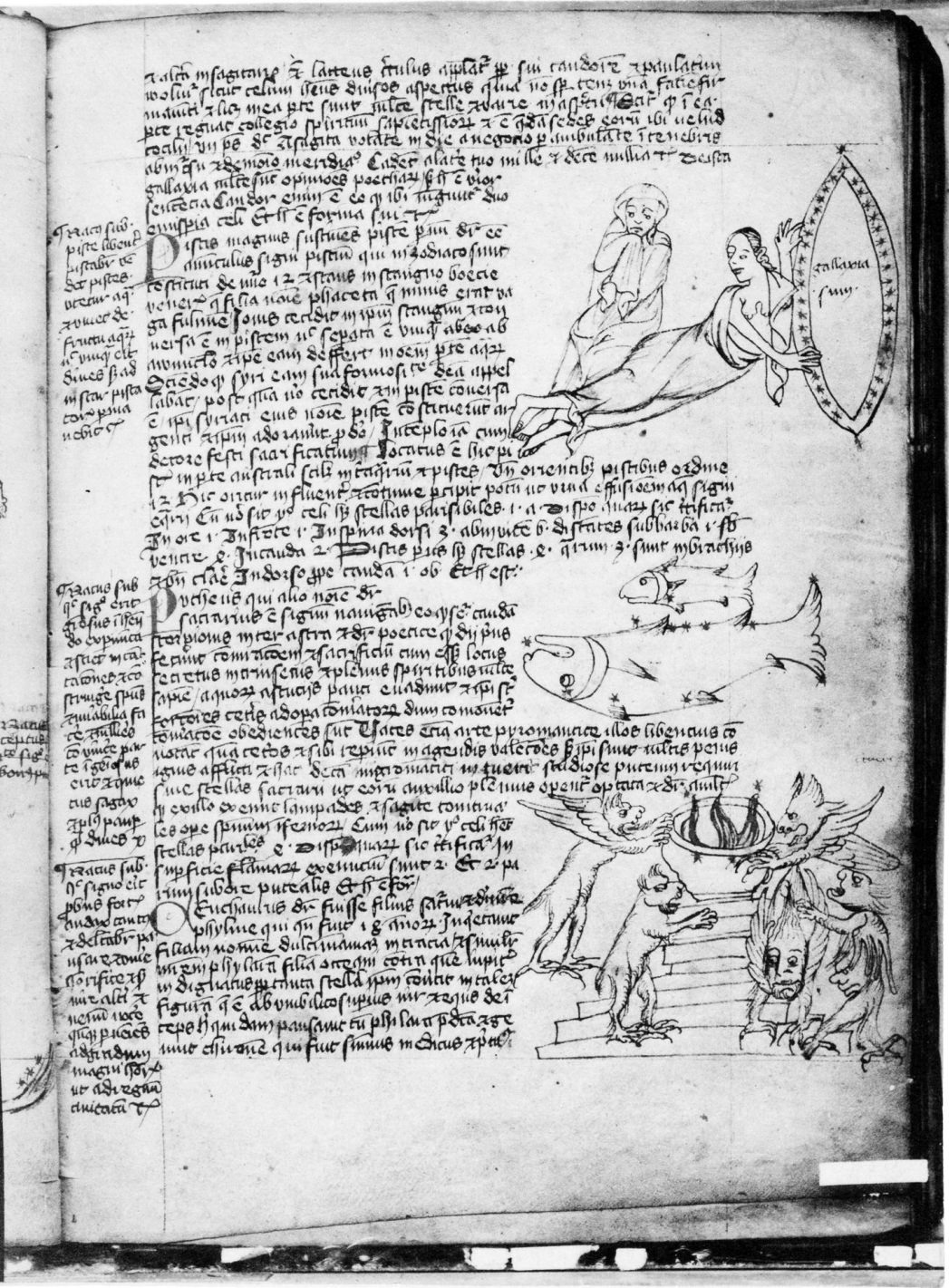
1807 - London's first gaslit road

1816 - Baltimore gaslit streetlights

1820 - Paris (1st electric lights, 1878)

1879 - Thomas Edison, incandescent lamps, led to development of light bulbs for street lighting





Chaucer (c1340-1400)

The Milky Way

'Lo,' quoth he, 'cast up thine eye
See yonder, lo! the galaxie
The which men clepe the Milky Way
For it is white ...'



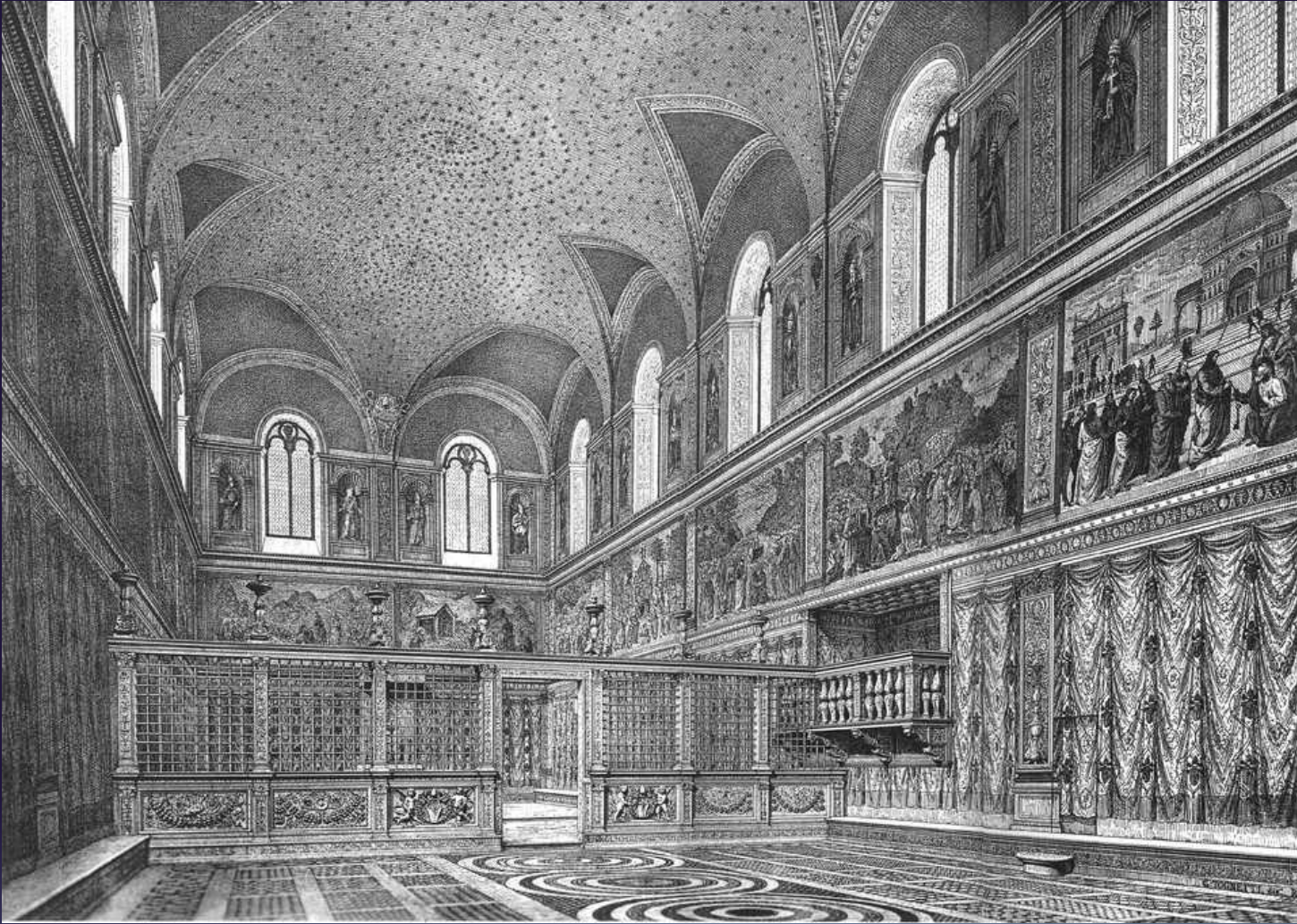
Padua 14th century

Geneva, 1589



Bohemia c 1400

Sistine Chapel Ceiling with starry sky, c 1479-80 ('pre-Michelangelo')



Piermatteo d'Amelia (c 1445-1508) design for Sistine vault, originally painted brilliant blue with gold stars (Uffizi)

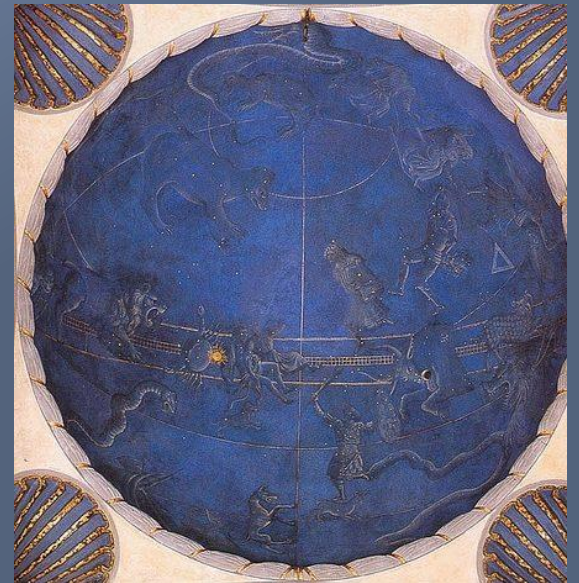




Dante, *Divine Comedy Paradiso*: I saw the lovely things the heavens hold and we came out to see once more the stars

Shakespeare, *Romeo and Juliet*: Take him and cut him out in little stars/And he will make the face of heaven so fine/That all the world will be in love with night

Shakespeare, *Julius Caesar*: The fault, dear Brutus, is not in our stars, but in ourselves ...





Tintoretto, *Birth of the Milky Way* 1575-80 (NG)



Peter Paul Rubens, *the Birth of the Milky Way* c 1637 Prado

Population growth and lighting (again)

Byron (1788-1824)

She walks in beauty, like the night
Of cloudless climes and starry
skies
(12 June 1814 - London)

Wordsworth (1770-1850)

I Wandered Lonely as a Cloud...
[Daffodils] Continuous as the stars
that shine/And twinkle on the milky
way ...
(1804, Lake District)





Van Gogh, *Starry Night Over the Rhône*
1888 (Arles)

Van Gogh (1853-90), *Starry Night* 1889,
Saint-Rémy-de-Provence

Edward Hughes
(1851-1917)

*Night with her
Train of Stars*
1912



*The sun .../ Sinks, and the darkening air/ Thrills with a sense of the triumphing night ...
Night with her train of stars (poem by Margaritae Sorori)*





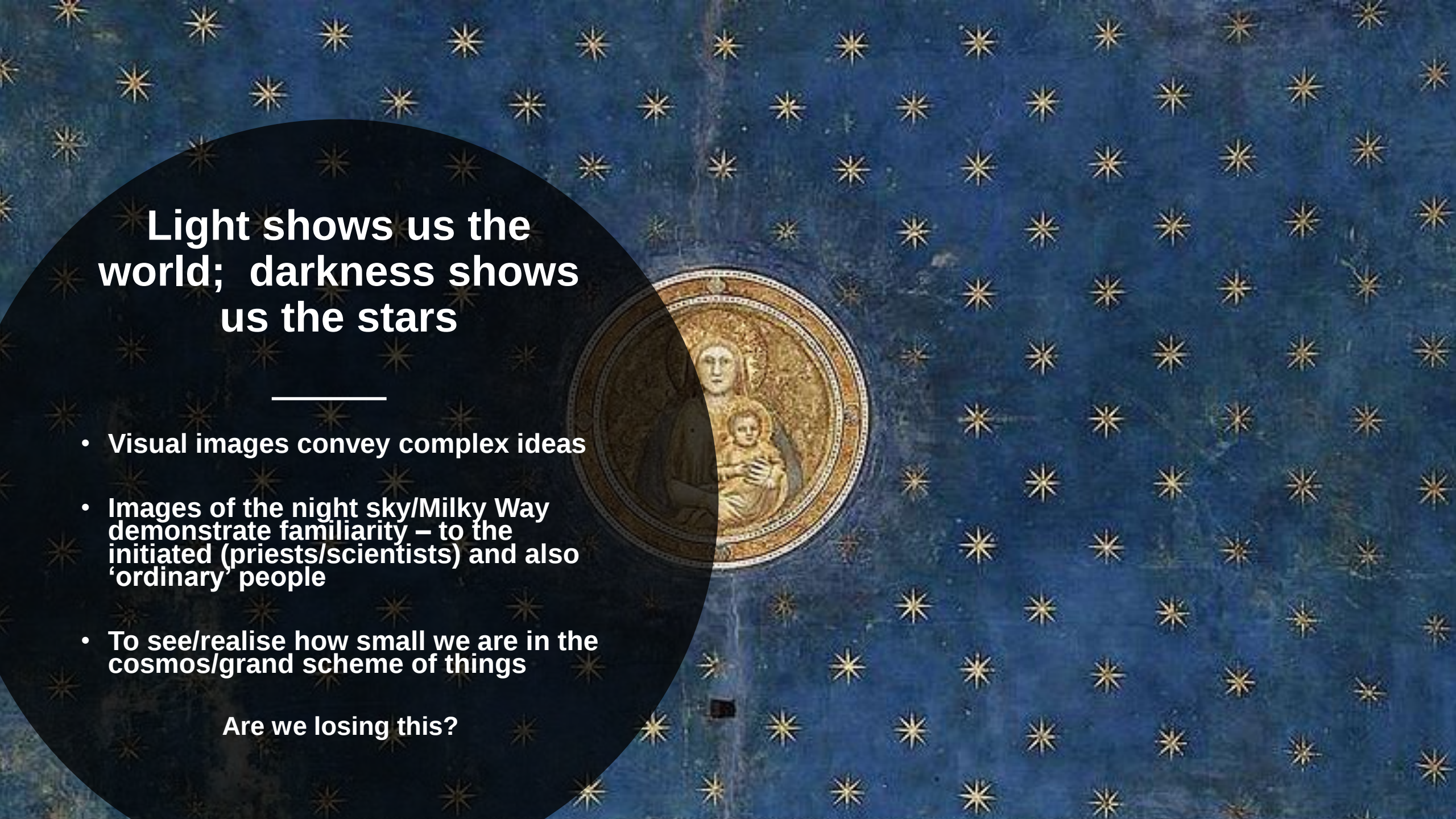
Norah Napaljarri Nelson, *Milky Way Dreaming*
c 2004 (Legends of the Warlpiri)

Mostly left to
astronomers and
(astro)photographers
nowadays ?





- Common usage – popular ..
 - Not because they are familiar?
 - But because, like the dinosaurs, threatened with 'extinction'?
-



Light shows us the world; darkness shows us the stars

- Visual images convey complex ideas
- Images of the night sky/Milky Way demonstrate familiarity – to the initiated (priests/scientists) and also ‘ordinary’ people
- To see/realise how small we are in the cosmos/grand scheme of things

Are we losing this?