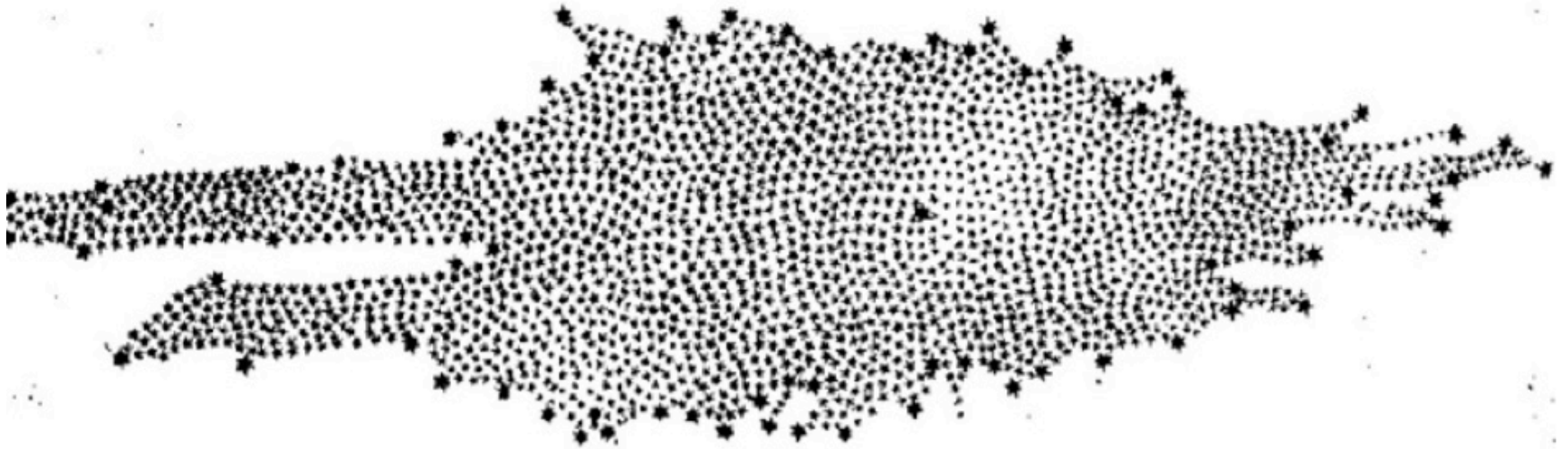


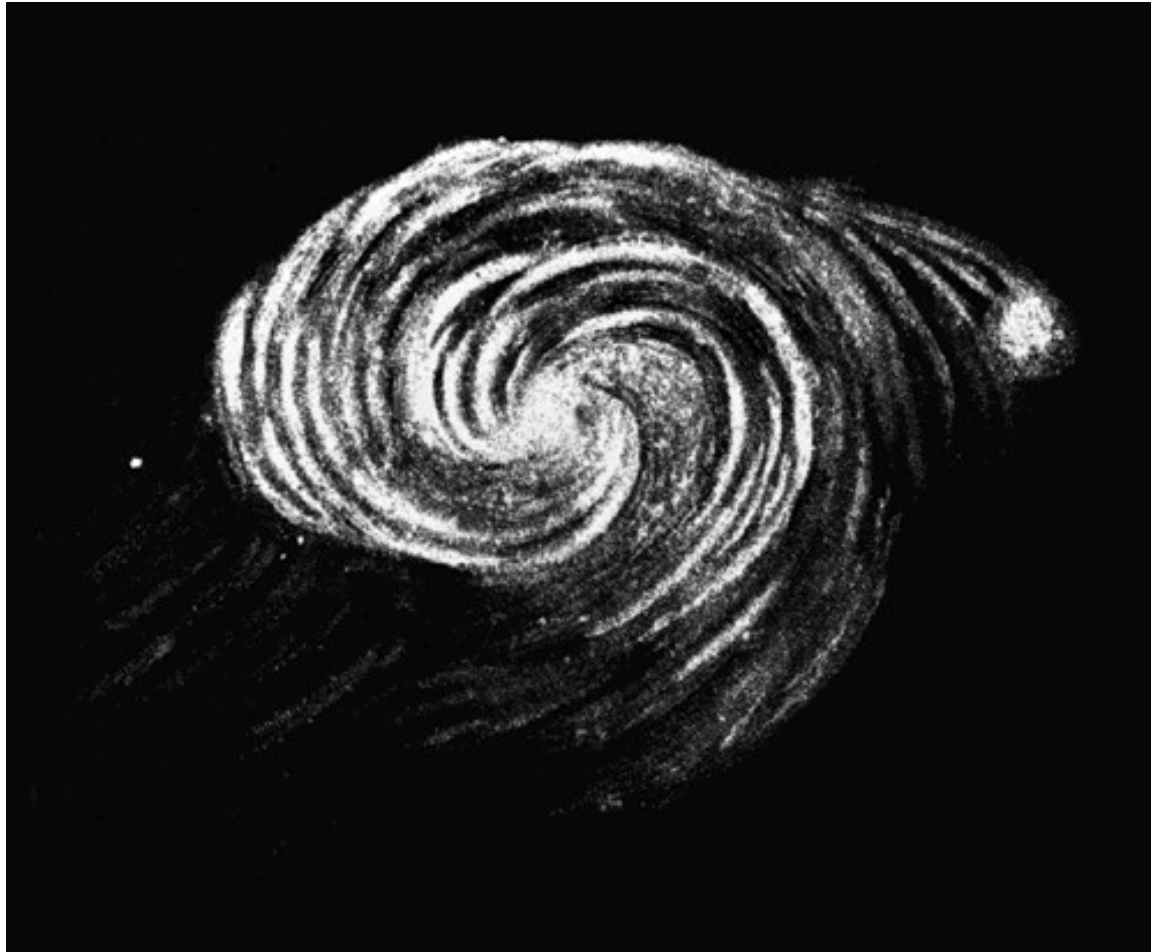
NÚTÍMINN

Vetrarbrautin

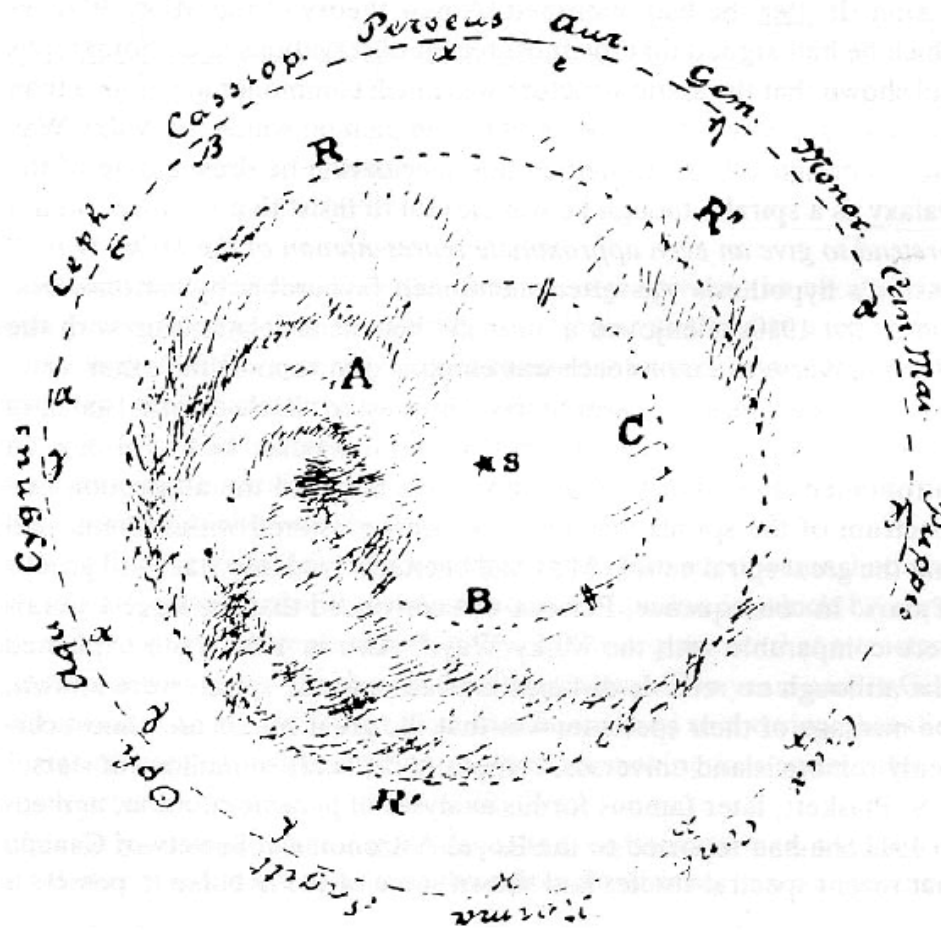
Vetrarbraut Herschels 1785



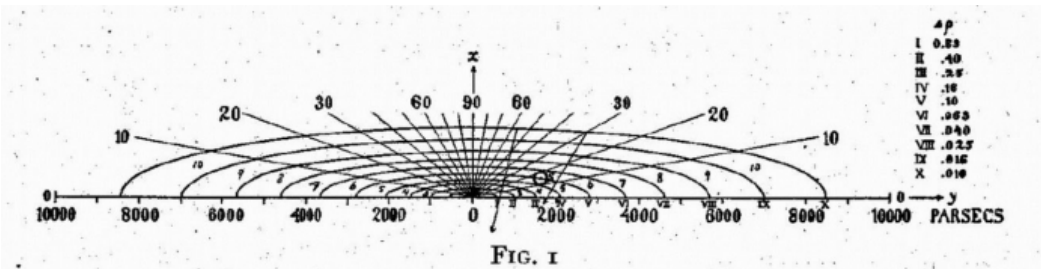
Mynd Parsons af M51 frá 1845



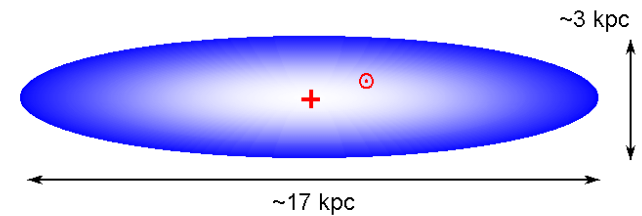
Vetrarbraut Eastons (1864-1929) frá 1900



Mynd Kapteyns (1851-1922) af Vetrarbrautinni frá 1922

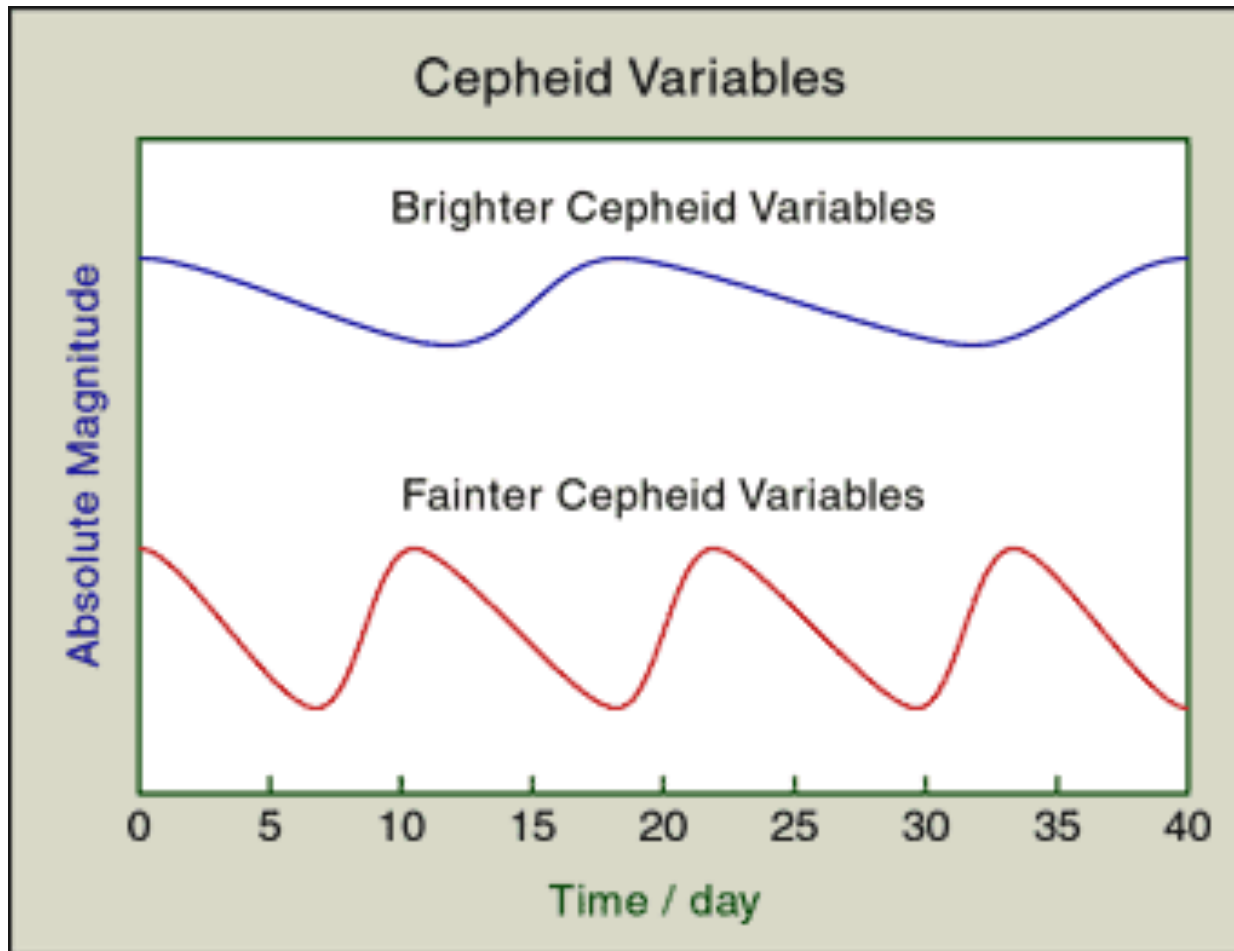


Kapteyn Model (1922)

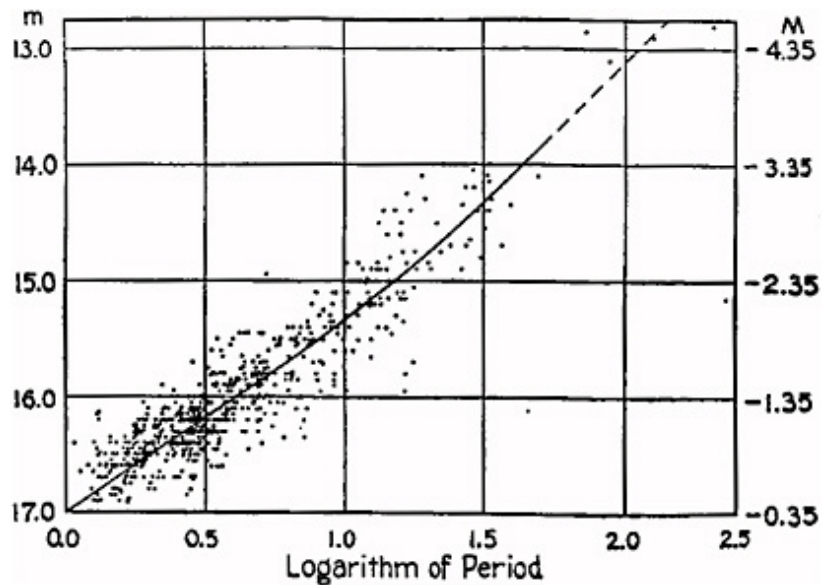


kpc = kiloparsec = 1000 pc = 3260 ljósár

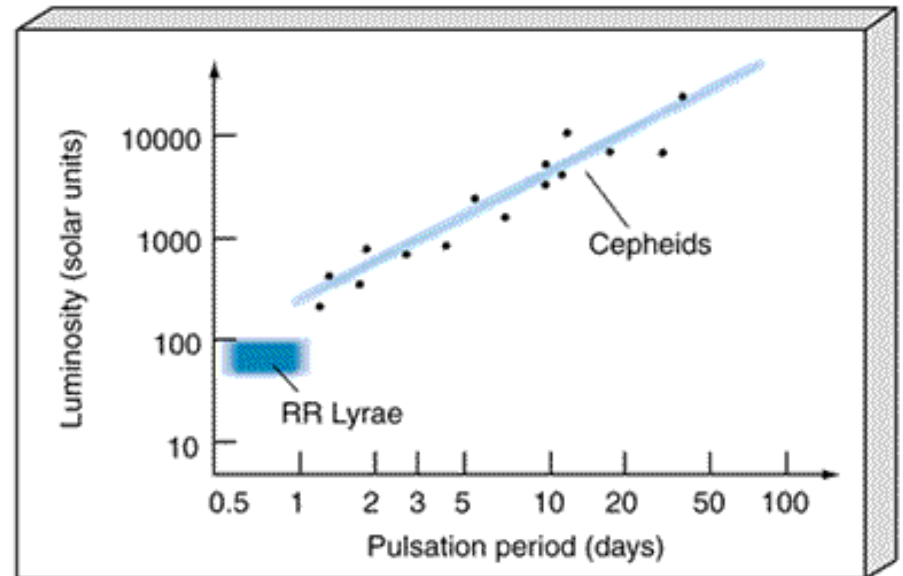
Sefítar (Cepheids)



Henrietta Leavitt (1868-1921) og sefítarnir

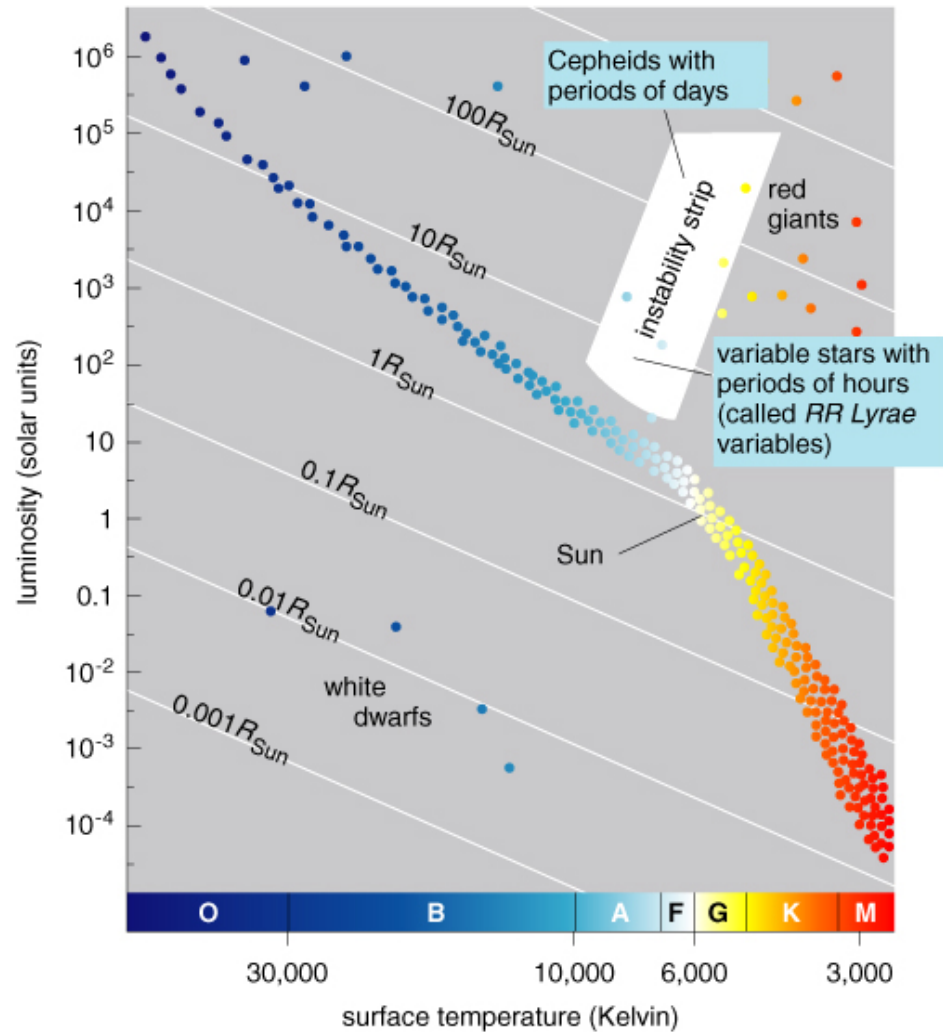


Upphaflega línuritið
frá 1912

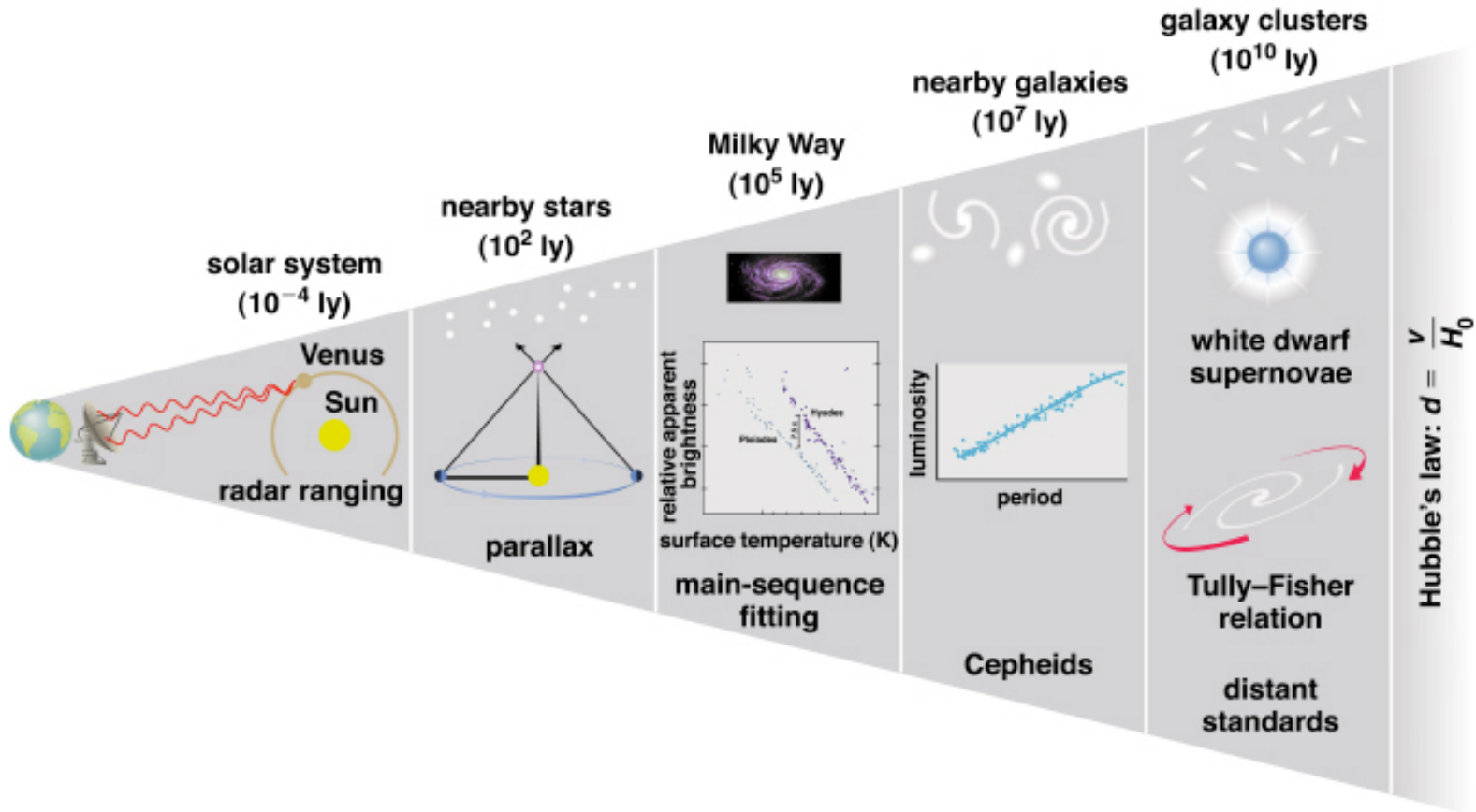


Auðlesnara línurit

Hertzsprung-Russell línuritið



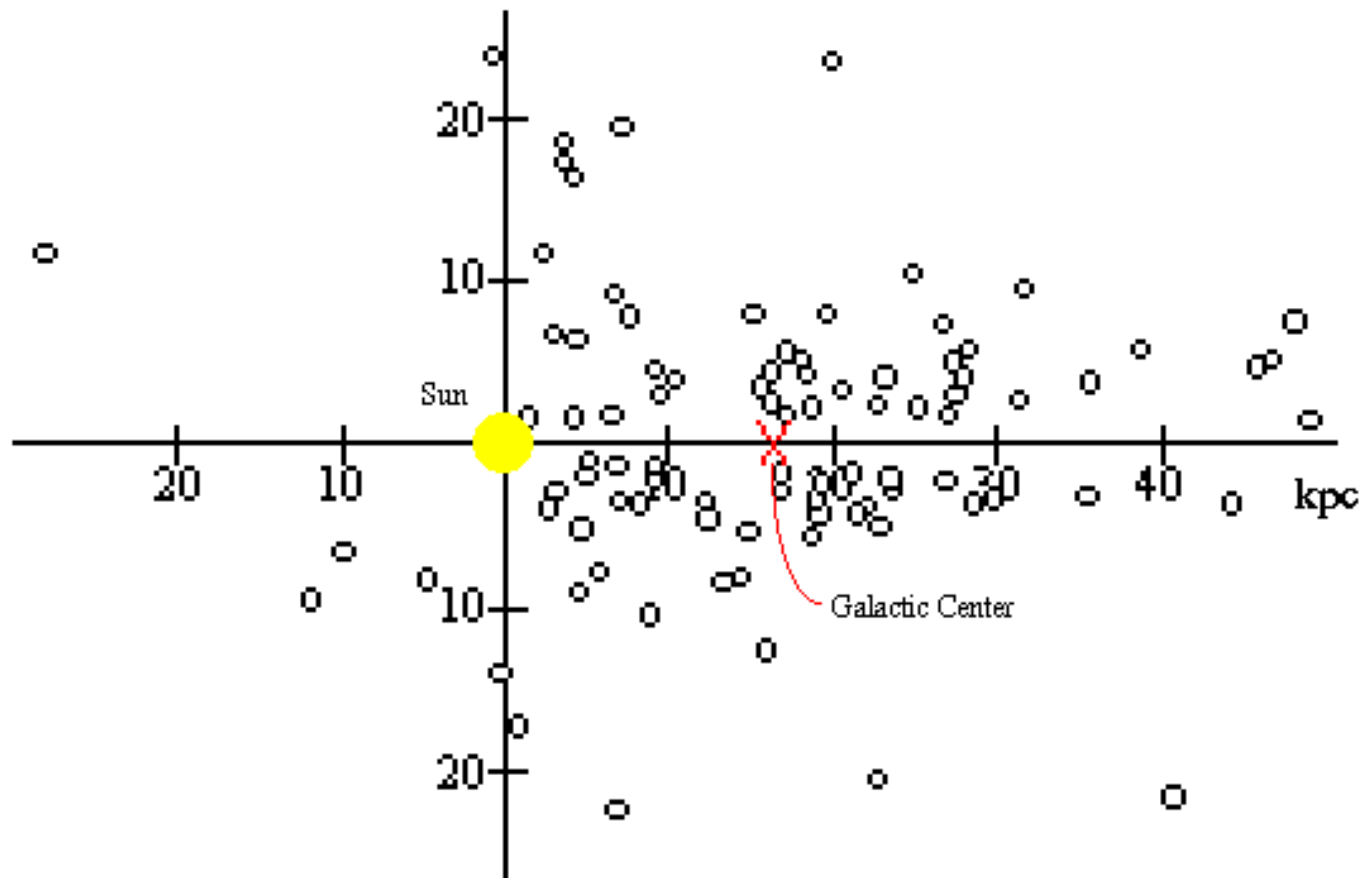
Fjarlægðarmælingar



Kúlupyrpingin M80

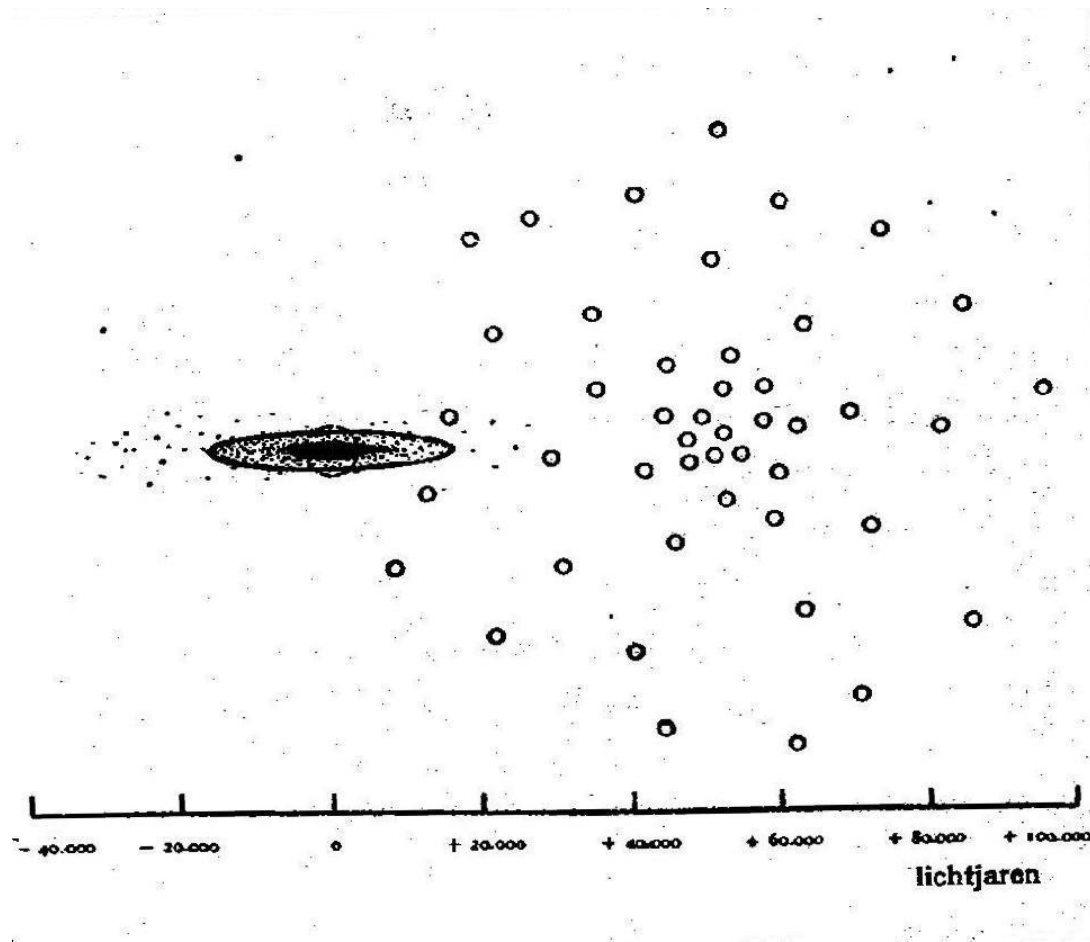


Dreifing kúlupyrpinga skv. Shapley (1885-1972) árið 1918



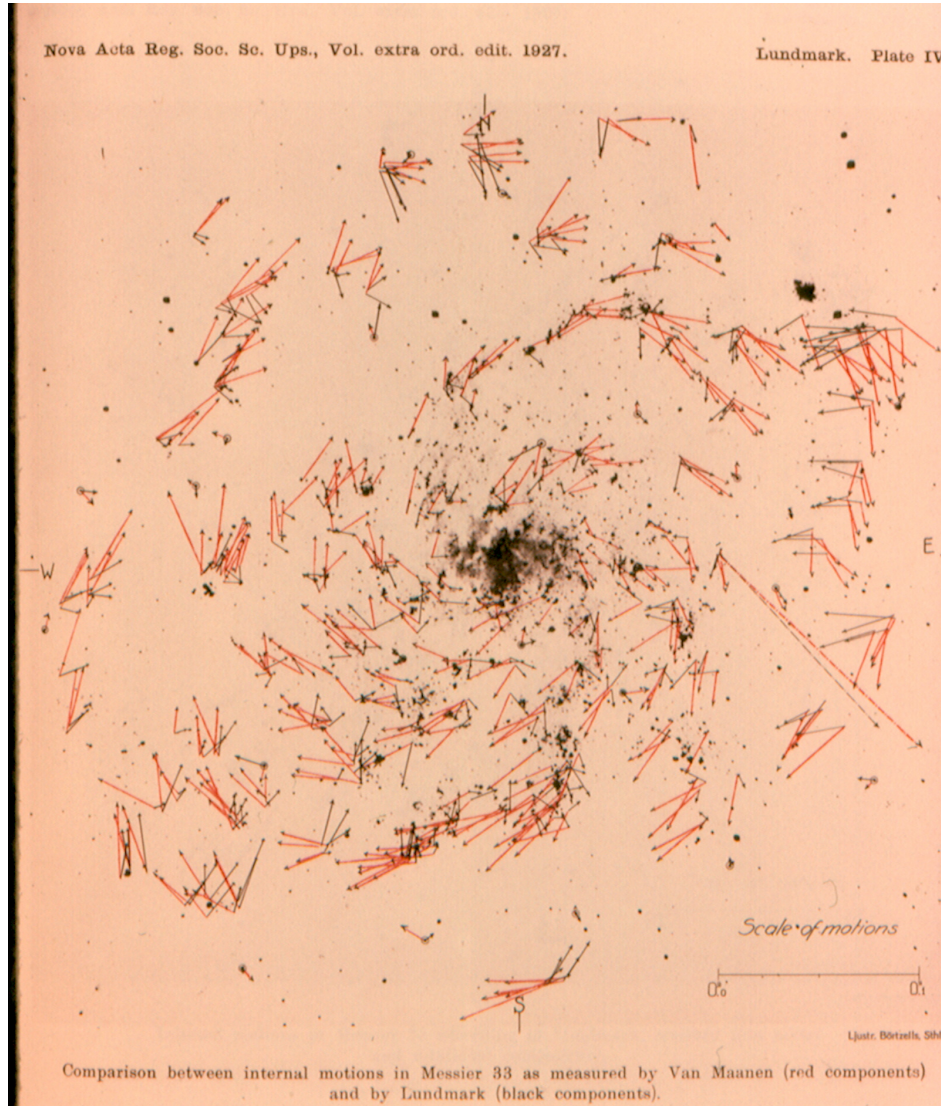
1 kpc = 3260 ljósár

Samanburður á Vetrarbrautarlíkönum Kapteyns og Shapleys



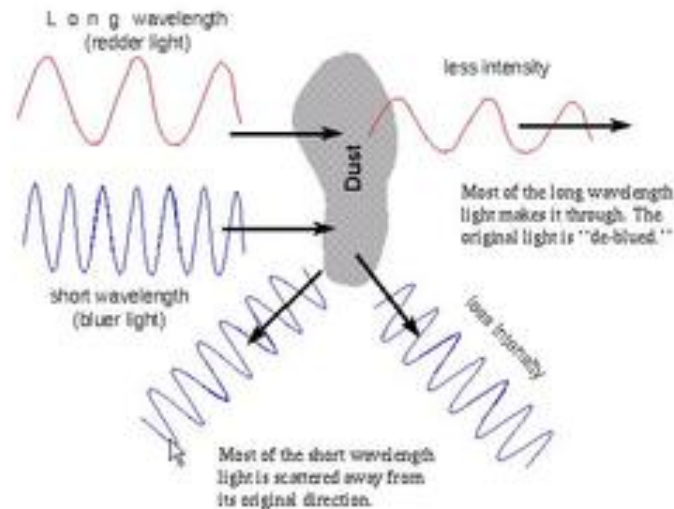
Úr bók De Sitters *Kosmos* frá 1932

Snúningsmælingar van Maanens



Roðnun og deyfing stjörnuljóss

Reddening and Extinction



The discovery of the dust is relatively recent. In 1930 *R.J. Trumpler* (lived 1886--1956) plotted the angular diameter of star clusters vs. the distance to the clusters.

This page was copied from [Nick Strobel's Astronomy Notes](http://www.astronomynotes.com). Go to his site at www.astronomynotes.com for the updated and corrected version.

Aðrar vetrarbrautir

Fyrsta ljósmyndin af Andrómedupokunni (Roberts 1888)



Slipher (1875-1969) og Dopplervik þyrilþoka

Spectra of the spiral nebulae

- **Analyse light of the spiral nebulae? (1909)**
Evolving solar system? Lowell
- **Slipher reluctant**
Larger telescopes failed
- **Experiments with spectrograph camera**
Good results with fast camera lens
- **Clear spectrum for Andromeda nebula (1912)**
Significantly blue-shifted
Approaching at 300 km/s
- **Many spiral nebulae red-shifted (1917)**



Vesto Slipher

$$\Delta\lambda/\lambda = v/c$$

red shift



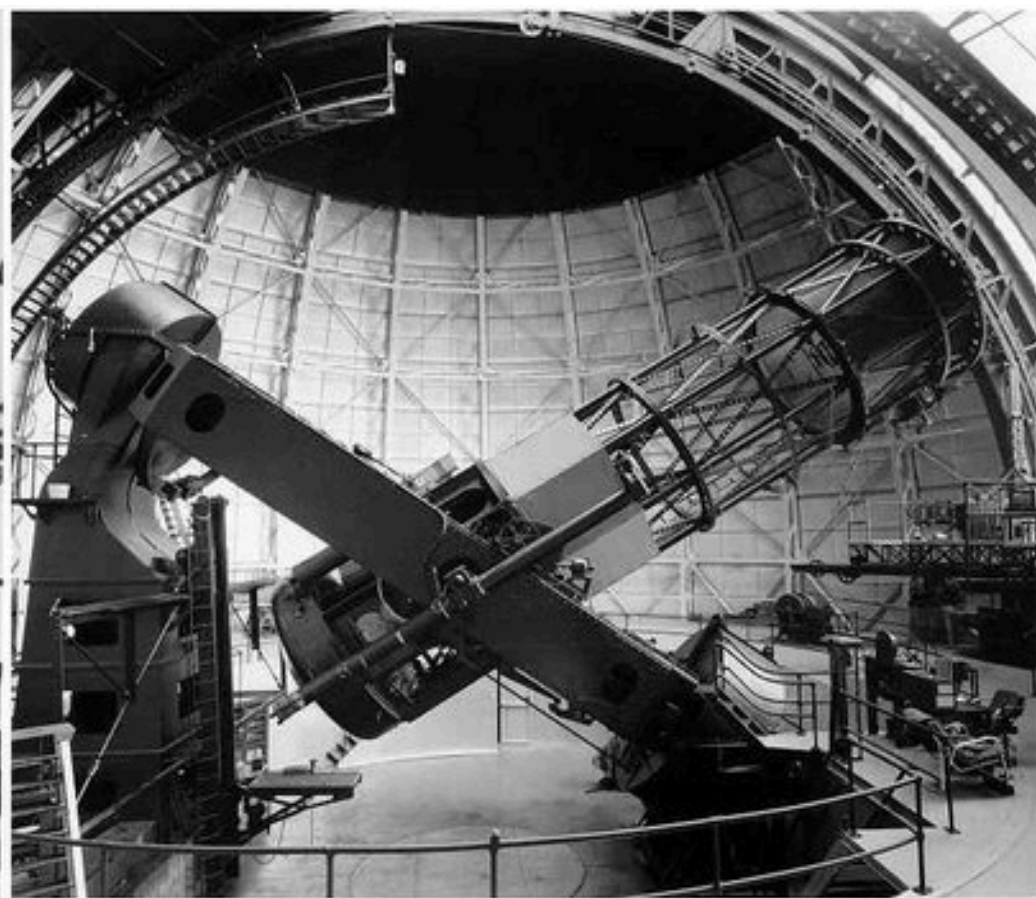
no motion



blue shift

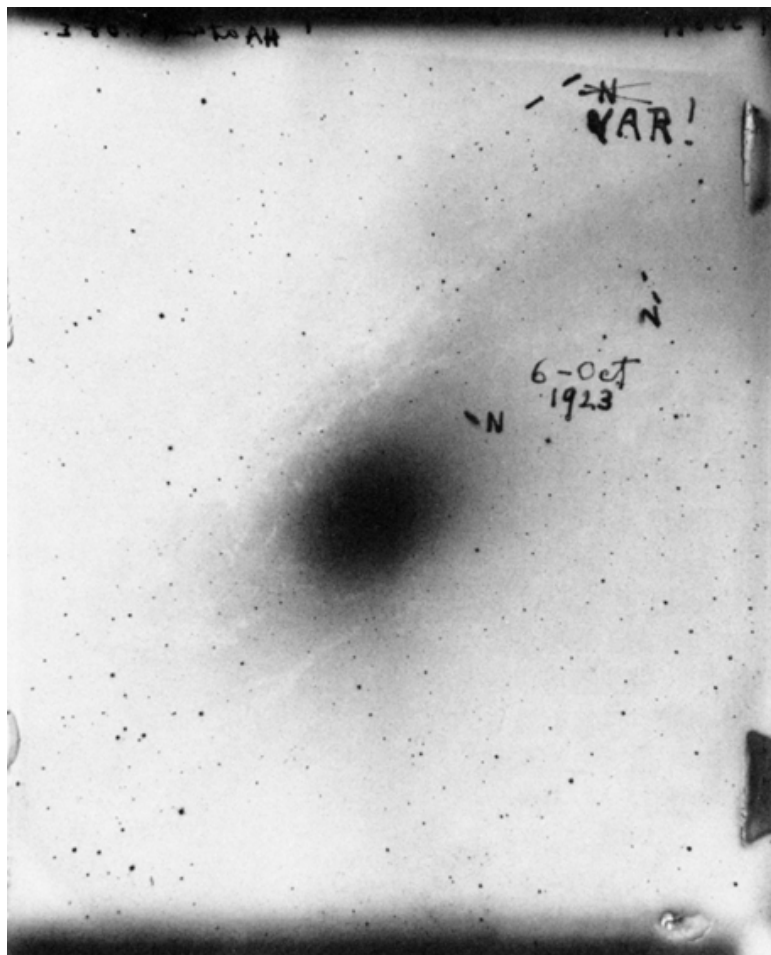


Edwin Hubble (1889-1953) og Hookers-sjónaukinn

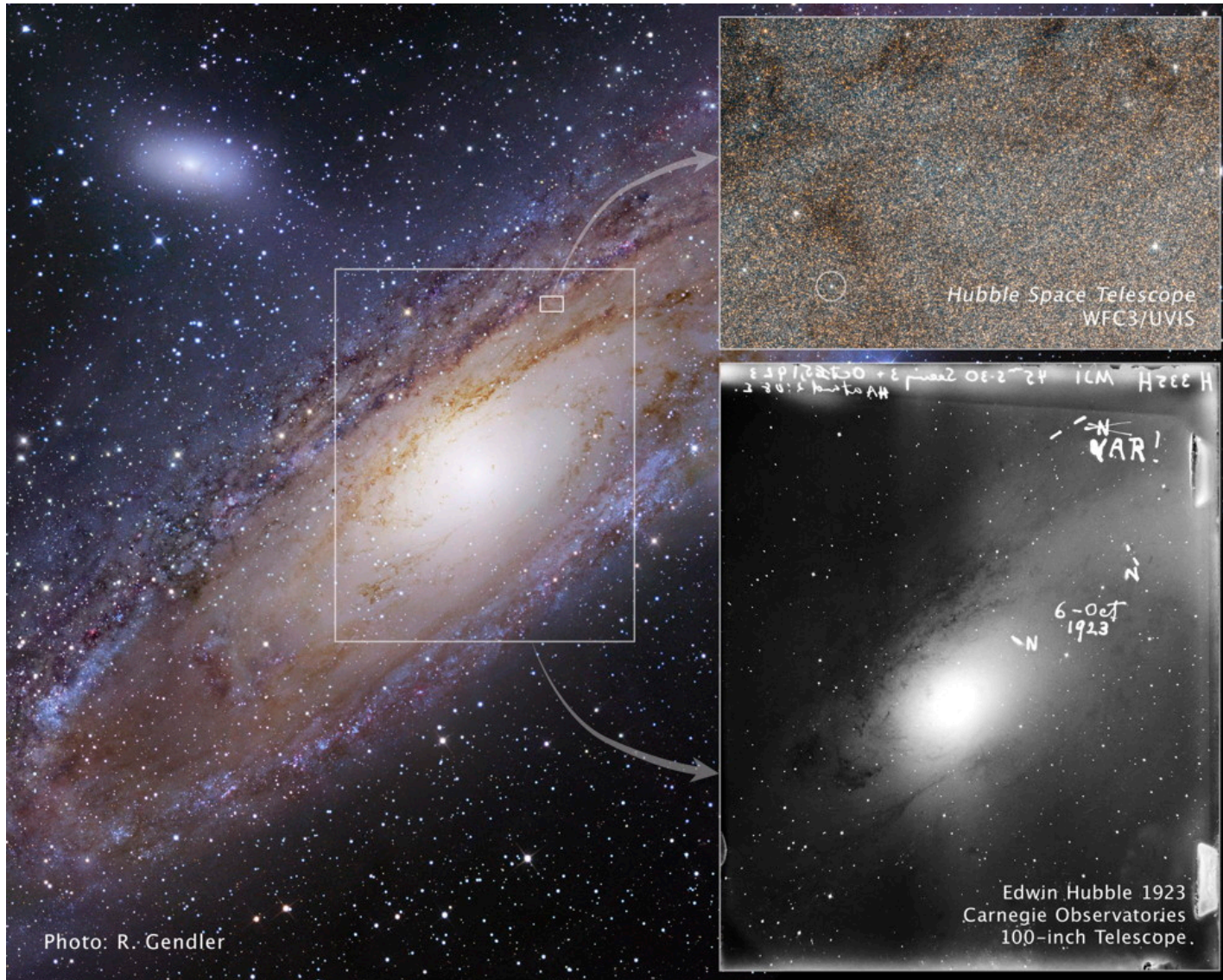


Edwin Hubble (1889-1953) and Hooker Telescope (2,5m), Mt. Wilson Observatory
Sources: Wikipedia, <http://www.astro.caltech.edu/>

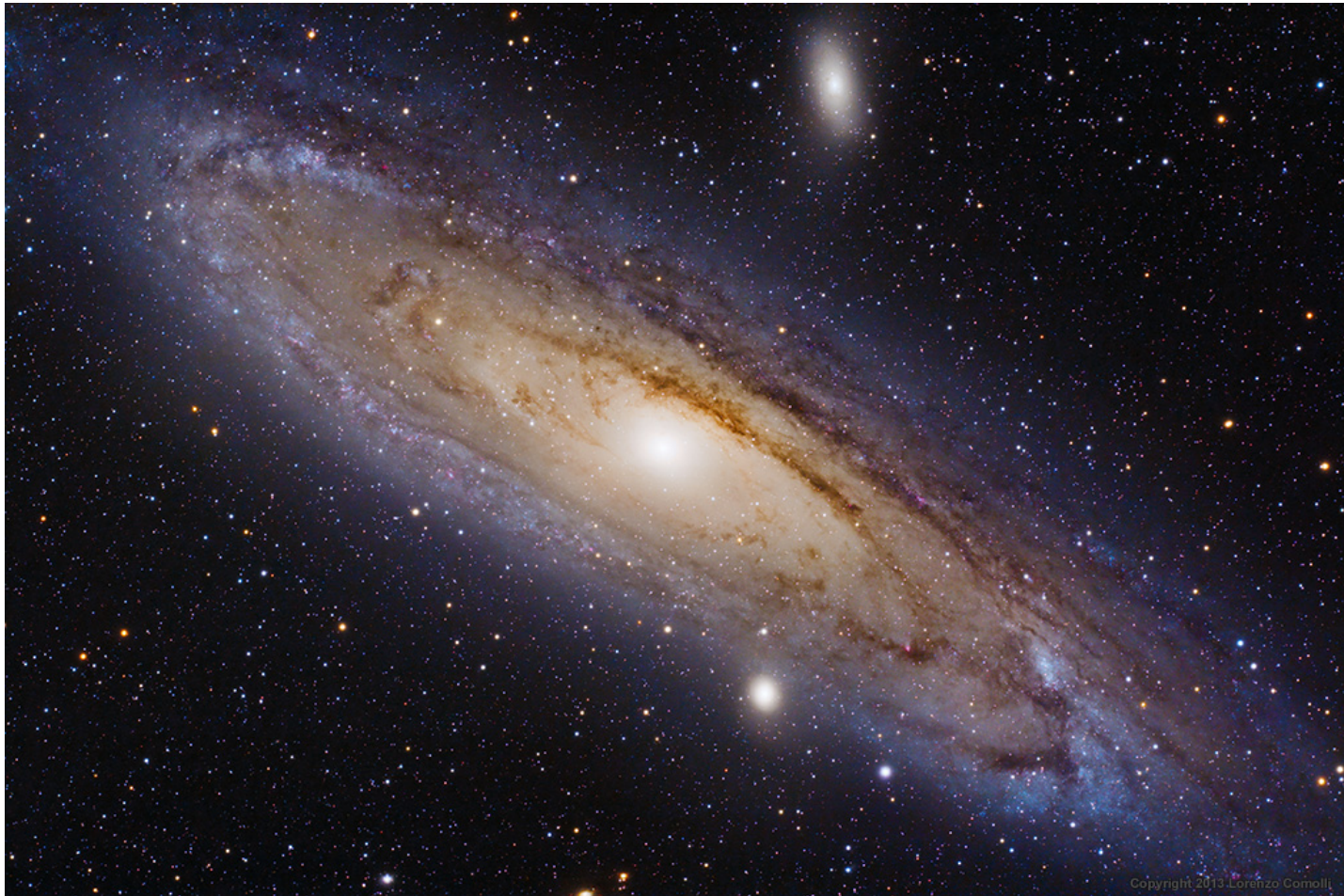
Mynd Hubbles af sefítanum í Andrómedu árið 1924



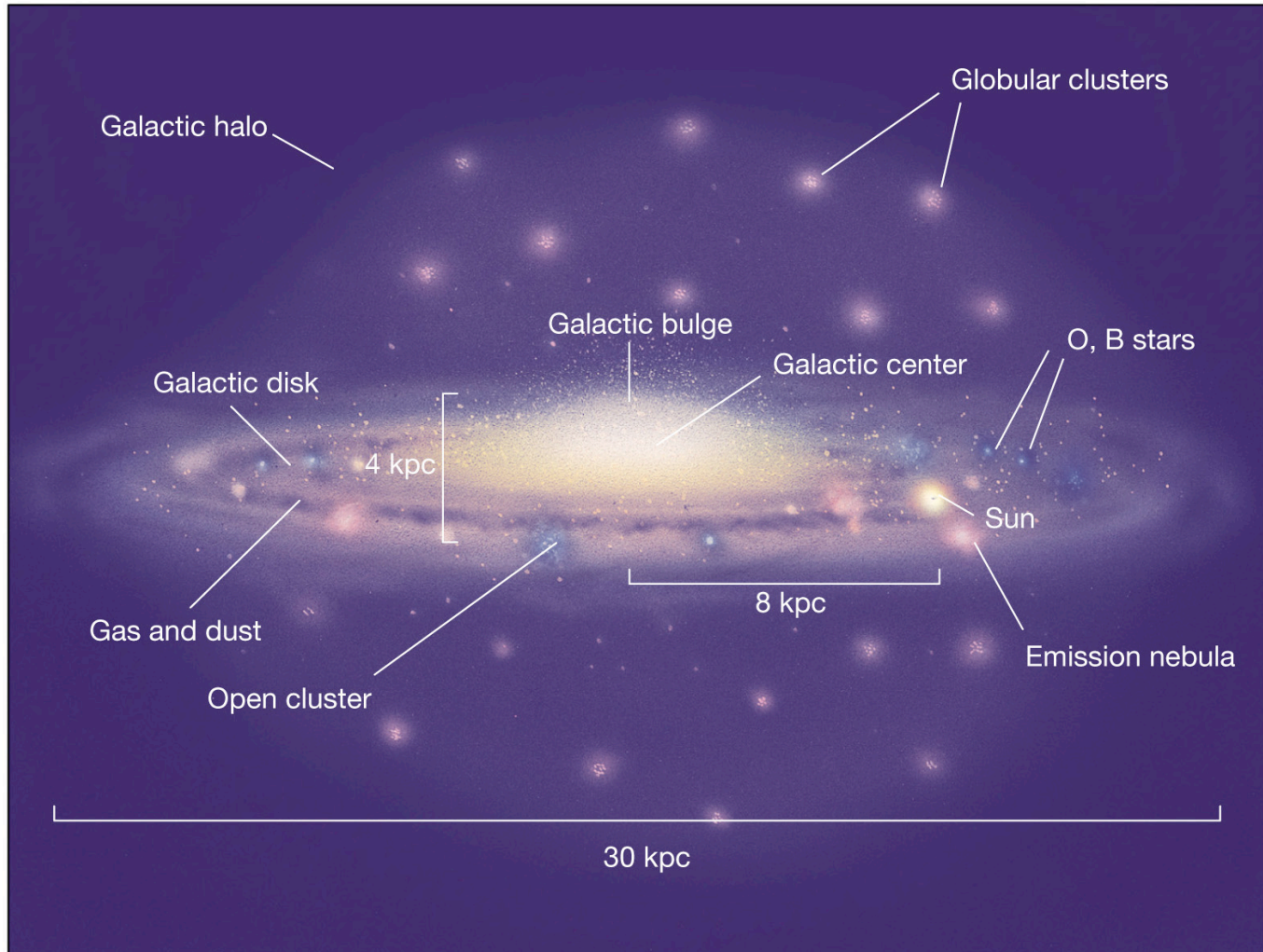
Staðsetning sefítans í Andrómedu



Andrómedaupokan



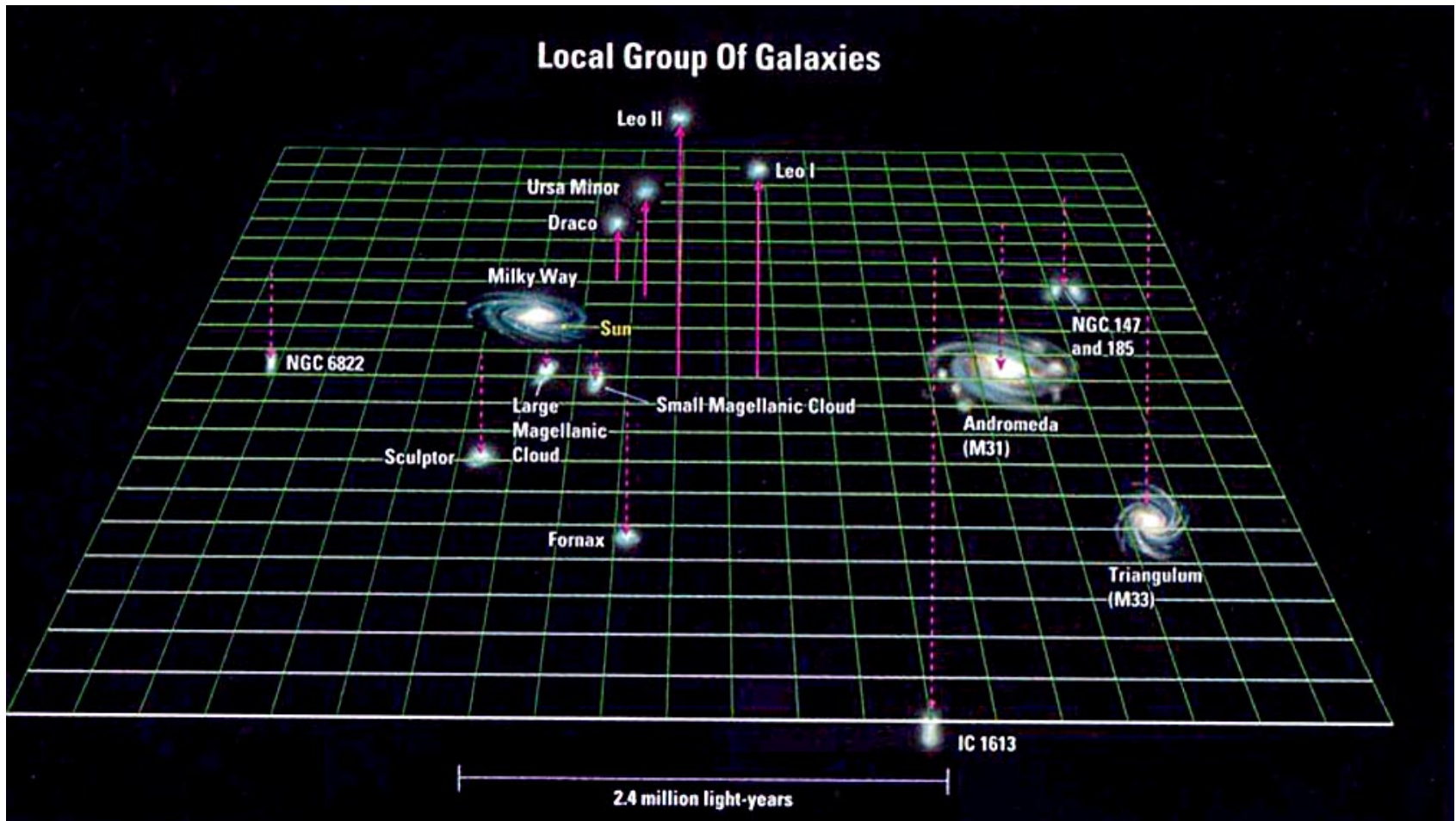
Vetrarbrautin okkar



Kortlagning hins sýnilega heims

Yfirlit

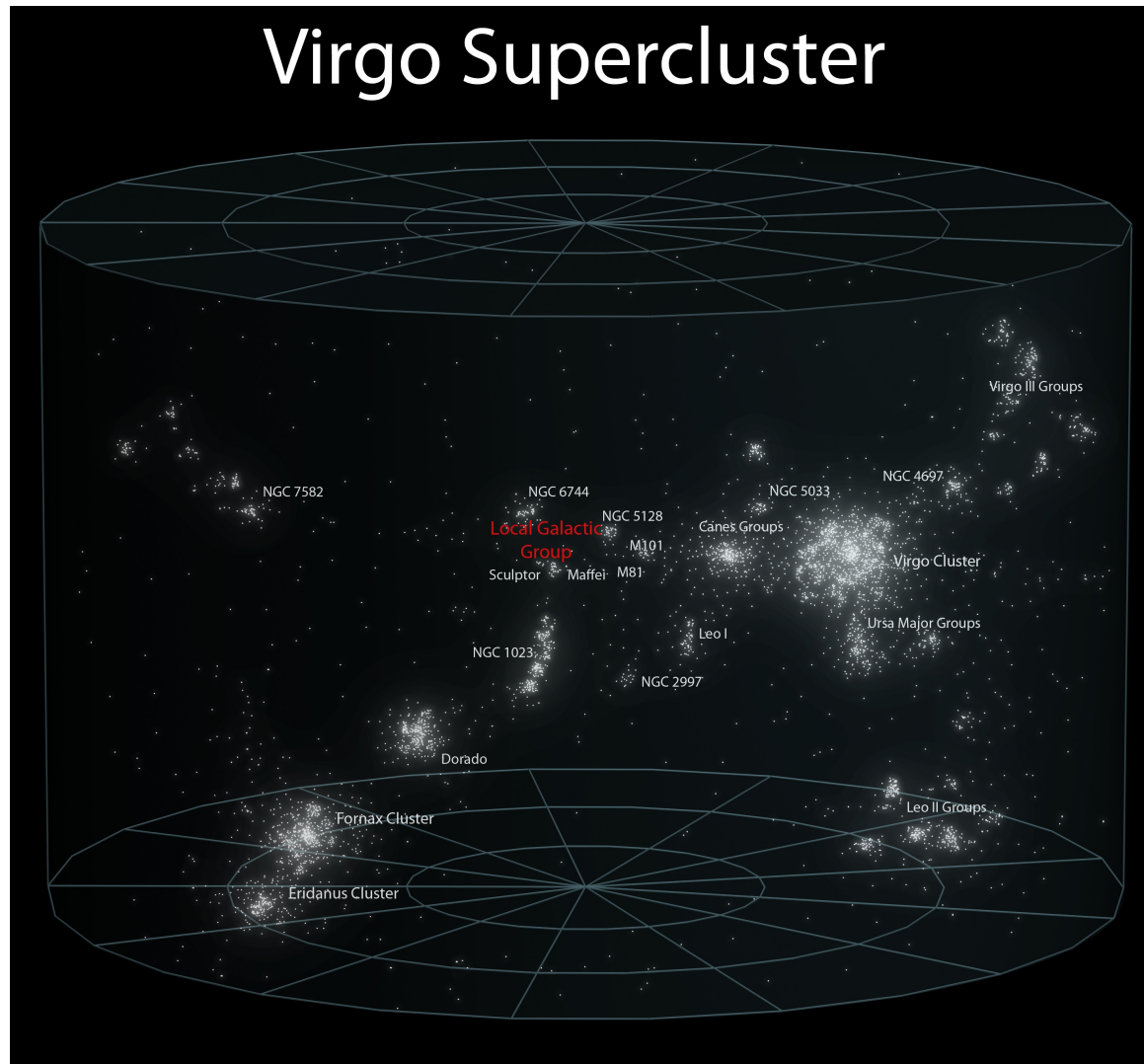
Vetrarbrautahópurinn okkar



Vetrarbrautir í Virgo-þyrpingunni

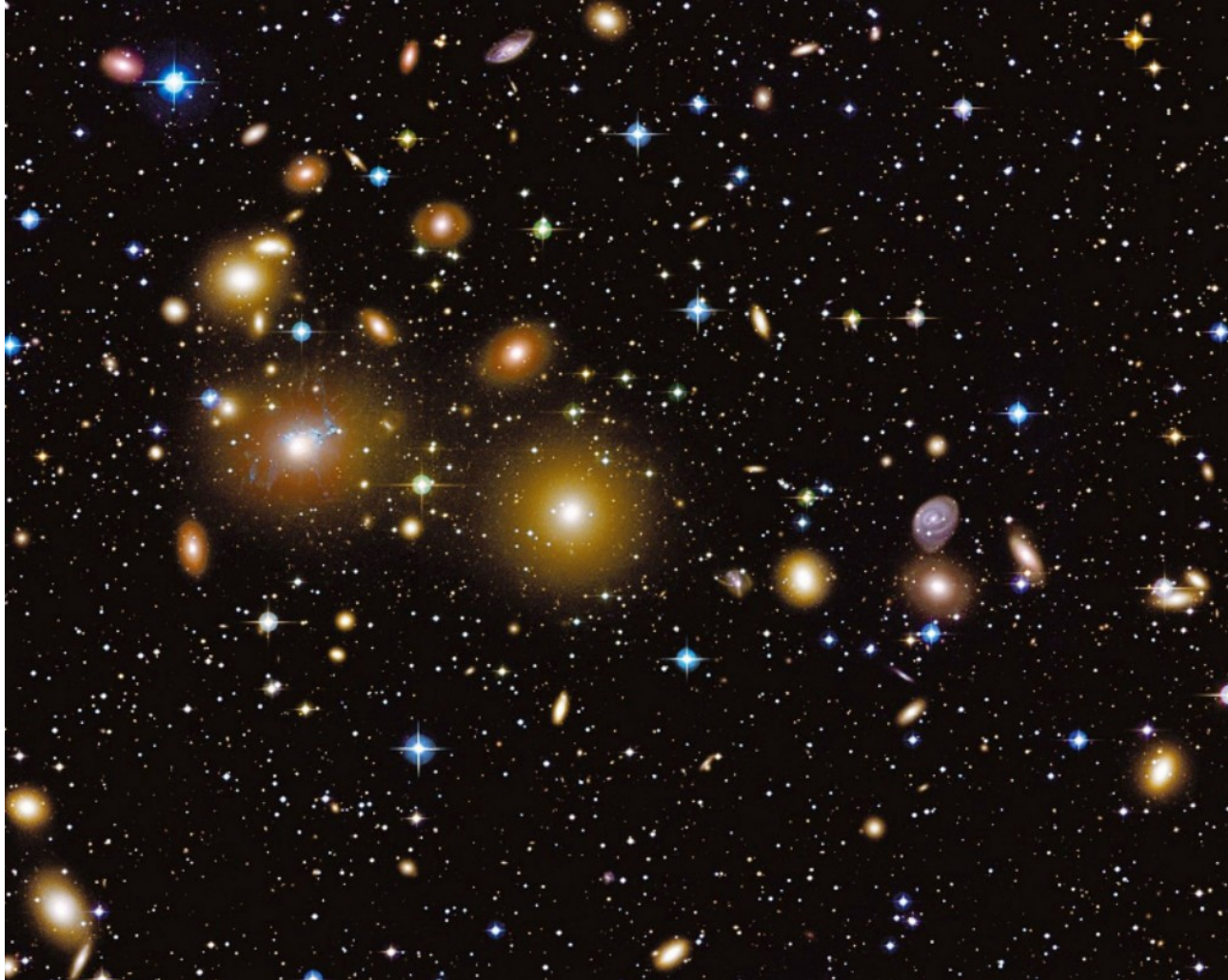


Umhverfi vetrarbrautahópsins okkar



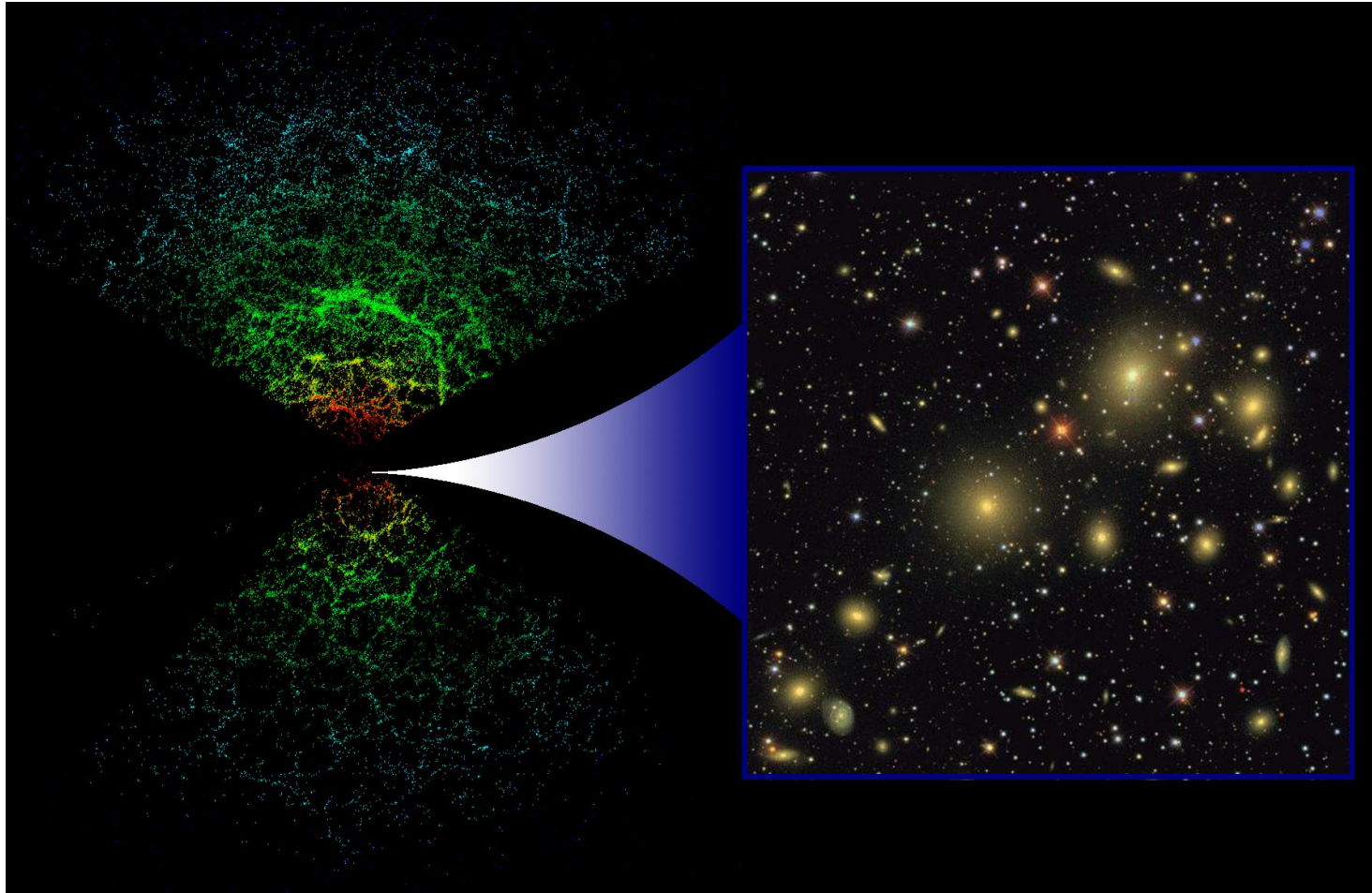
Fjarlægð Virgo-þyrpingarinnar frá hópnum okkar er um 54 milljónir ljósára

Perseus-þyrpingin, Abell 426



Fjarlægð frá okkar hóp um 250 milljónir ljósára

Stórgerð alheimsins



Til hægri:
Abell 426

Vetrarbrautin okkar er í miðju myndarinnar til vinstri. Fjarlægðin til vetrarbrautanna lengst frá miðju er um tveir milljarðar ljósára