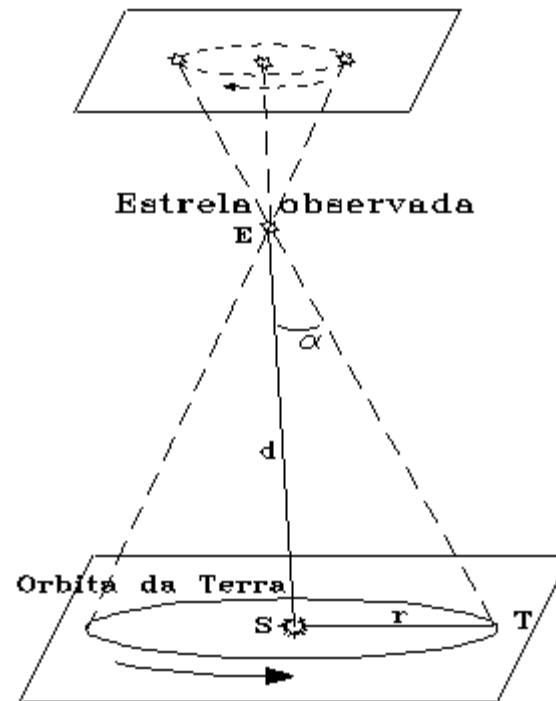


AGA0101 1.4 Escalas de distâncias extragalácticas

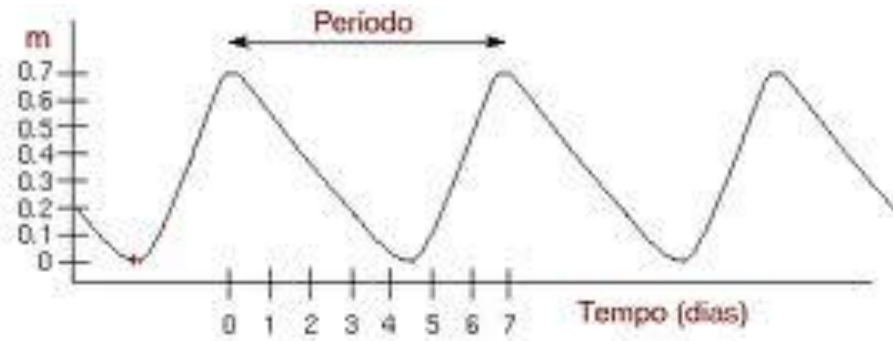
Paralaxe trigonométrica



$$\text{sen } \alpha = \frac{r}{d}$$

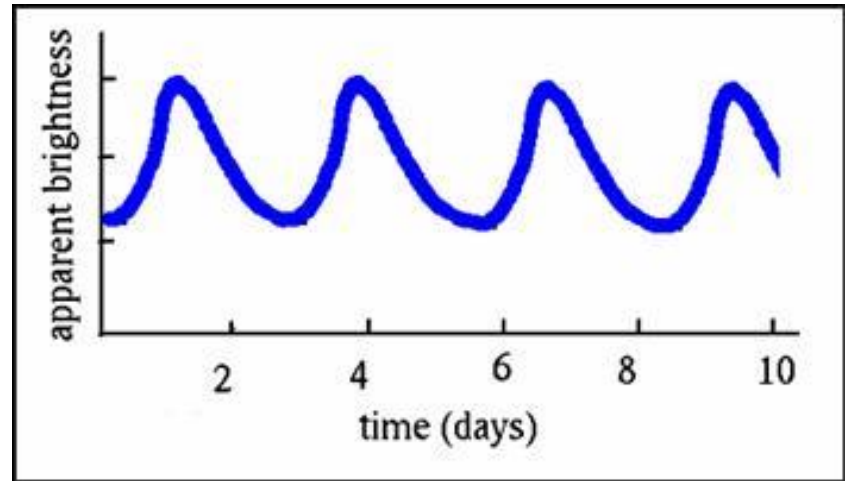
r = raio da Terra
 d = distancia da estrela

Cefeidas





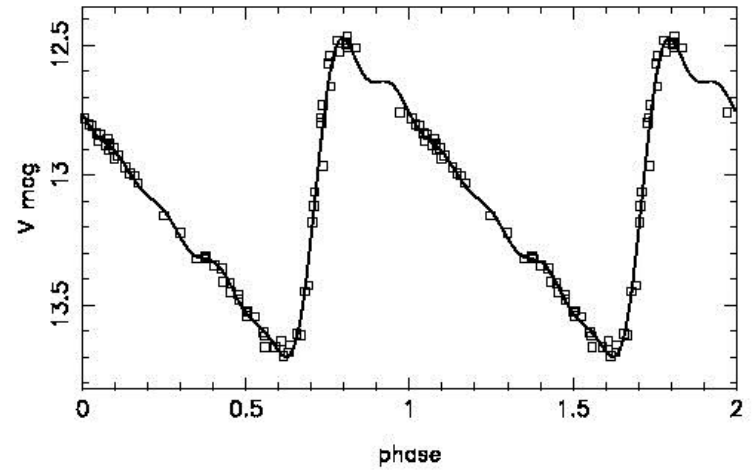
Henrietta Swan Leavitt



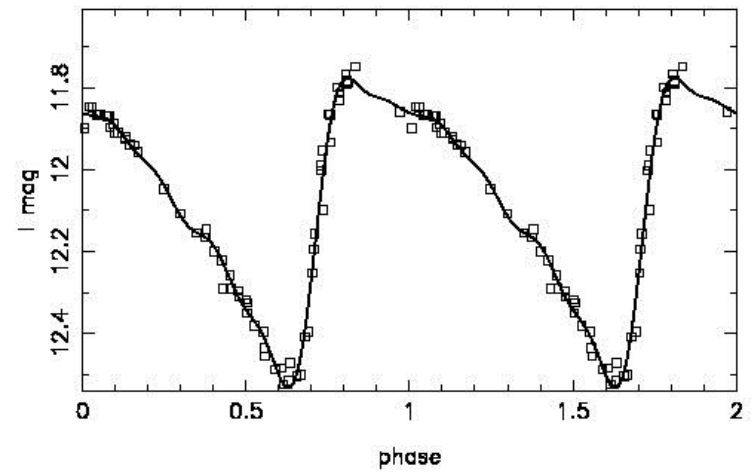


copyright: Curator of Astronomical Photographs at Harvard College Observatory

HV2257_ : P = 39.3700days, N(obs) = 66



HV2257_ : P = 39.3700days, N(obs) = 66



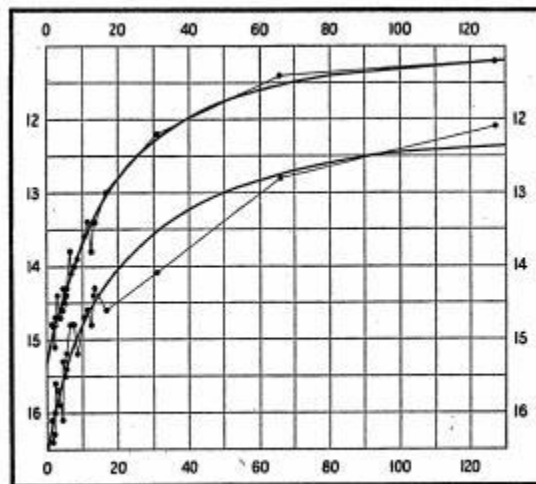


FIG. 1.

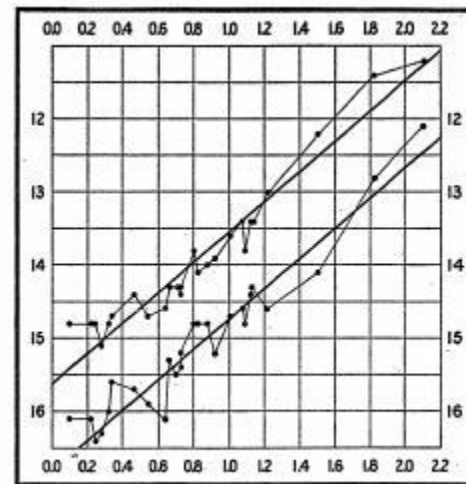
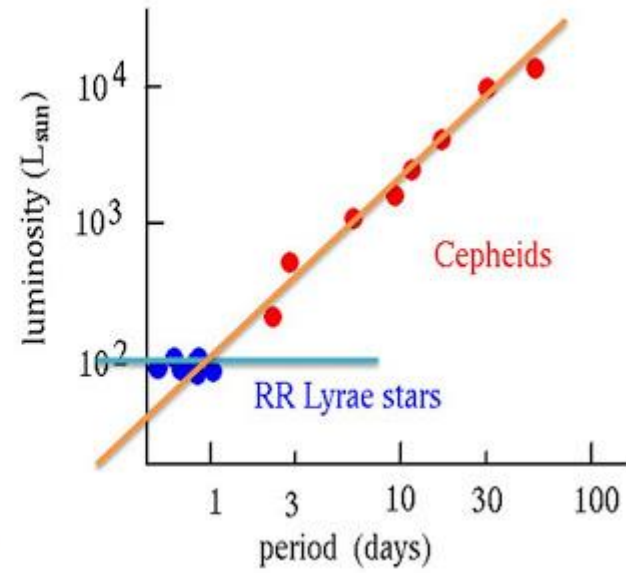
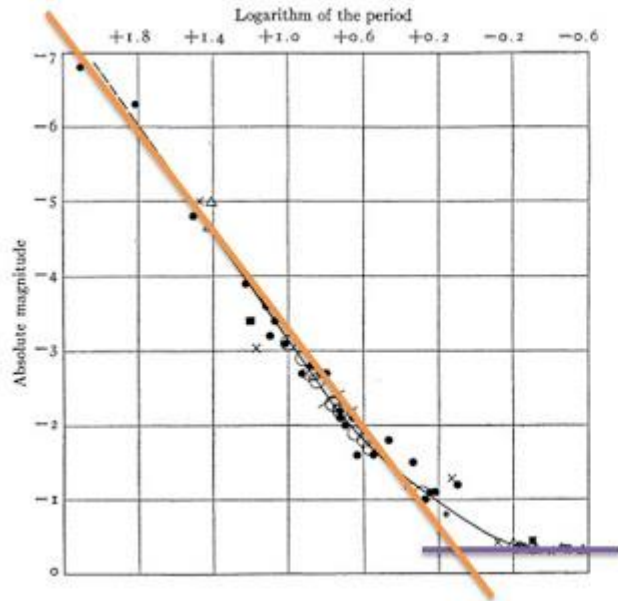


FIG. 2.

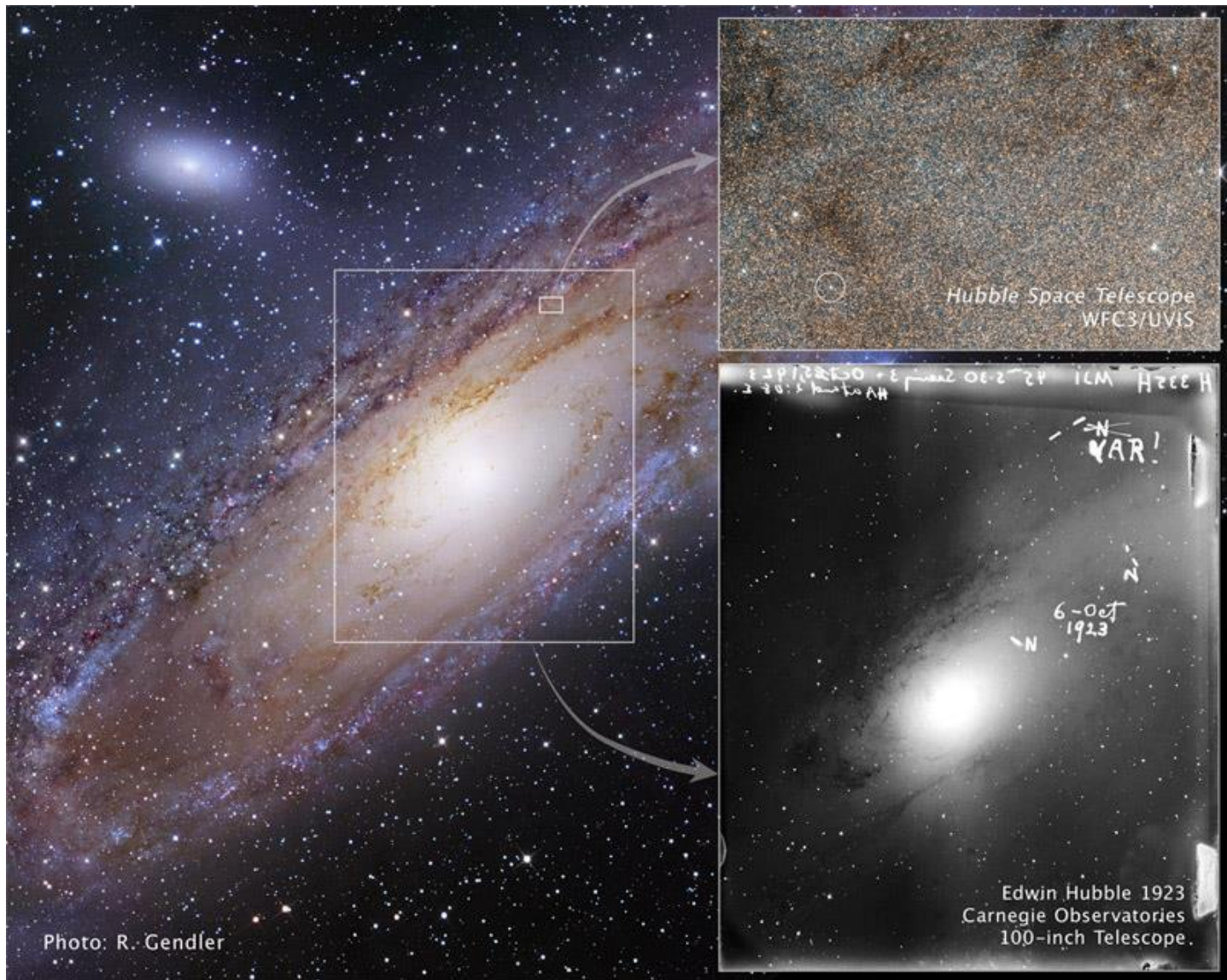


$$M_v = -2,76 \log(P) - 1,4$$

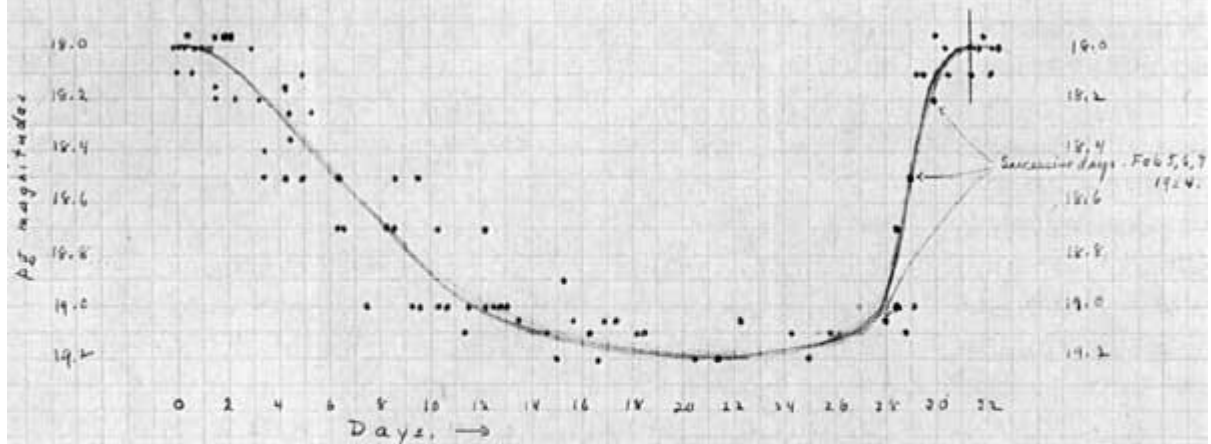
O Grande Debate

- O “Grande Debate” ocorreu em **26 de abril de 1920** no Smithsonian Museum of Natural History entre Harlow Shapley e Heber Curtis sobre a natureza das nebulosas espirais e o tamanho do universo.
- **Shapley** argumentou que a Via Láctea era o universo inteiro. Andromeda e outras nebulosas espirais eram parte da Via Láctea.
- **Curtis**, por outro lado argumentava que essas nebulosas eram galáxias separadas, como sugerido pelo filósofo Immanuel Kant no século 18.

A primeira cefeida de Andrômeda (Hubble, 1923)

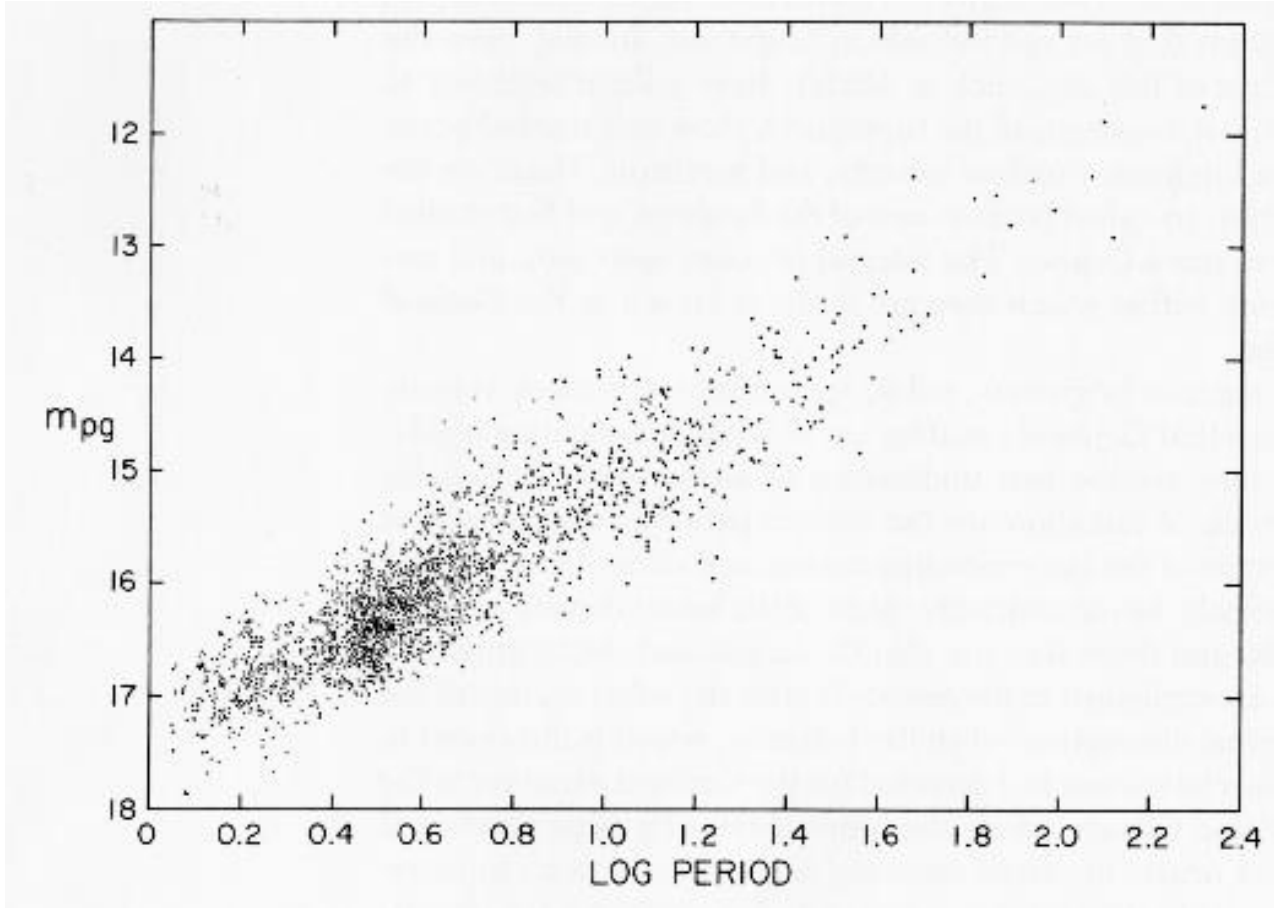


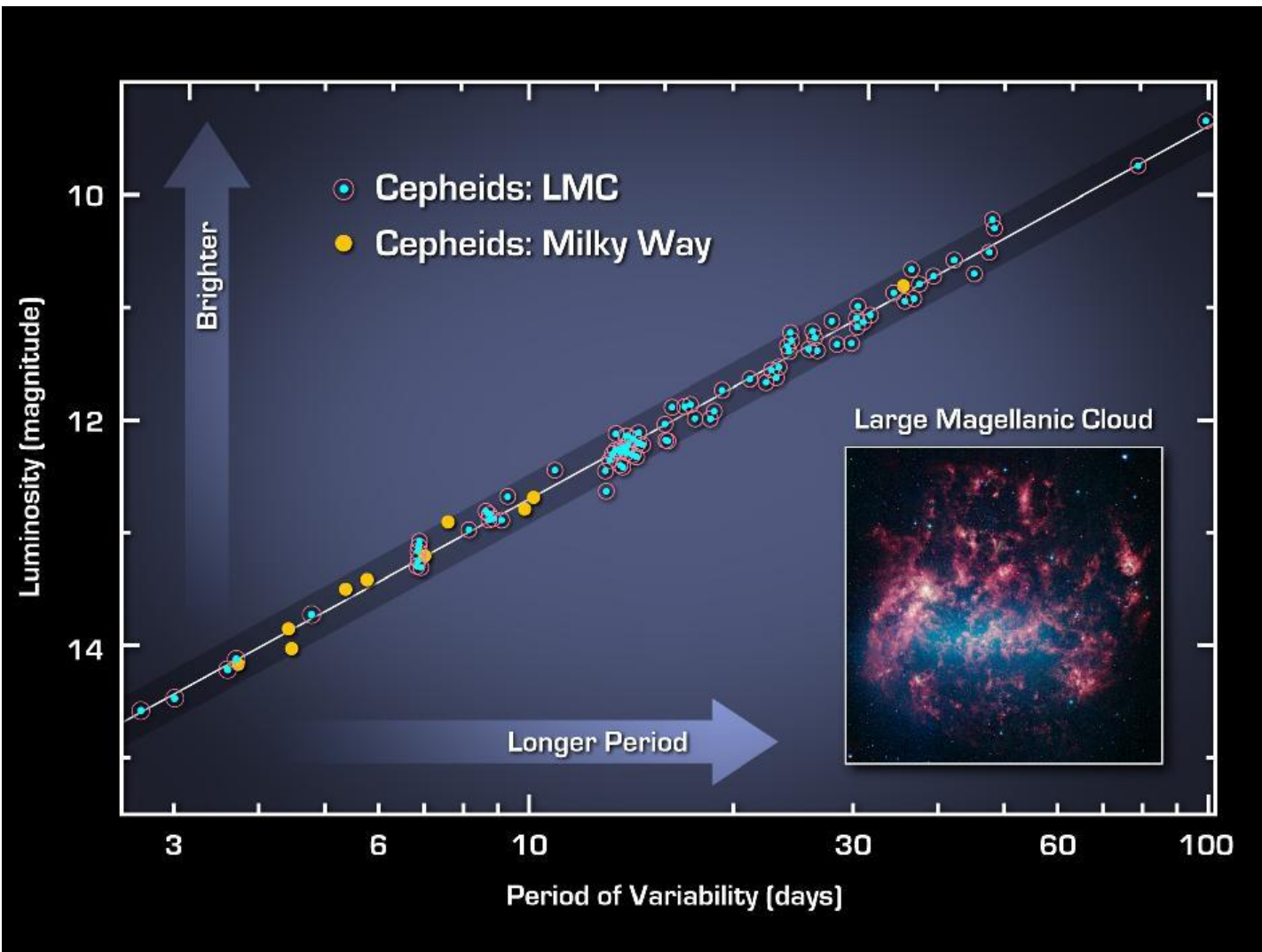
Variable No 1 in Messier 31.
 15' 20" from nucleus in a direction West by 22 1/2° South.

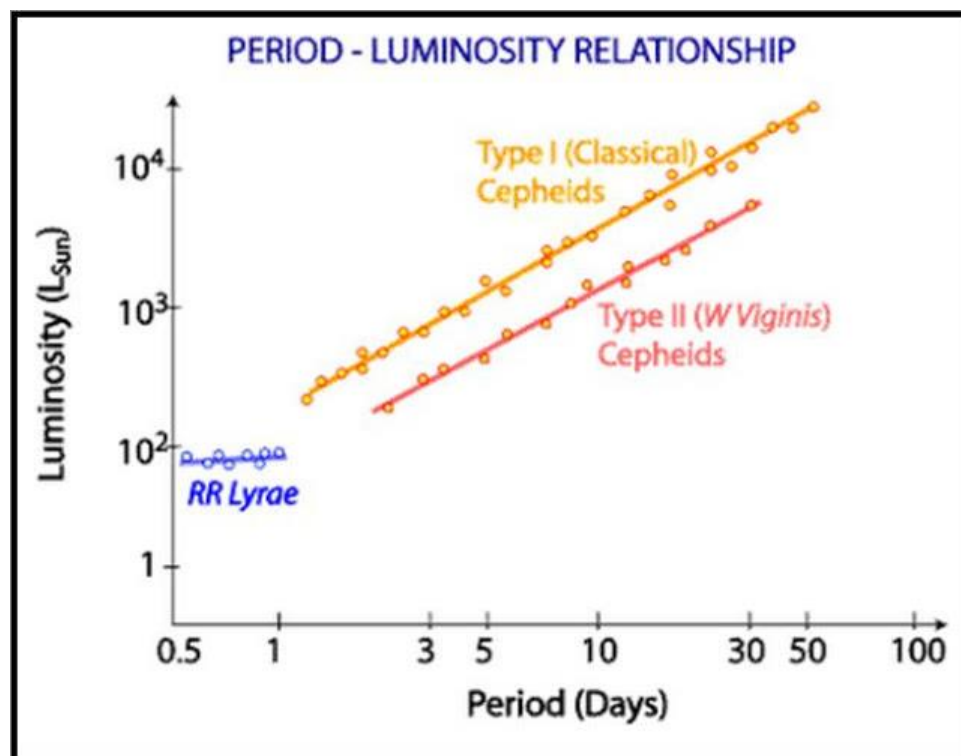


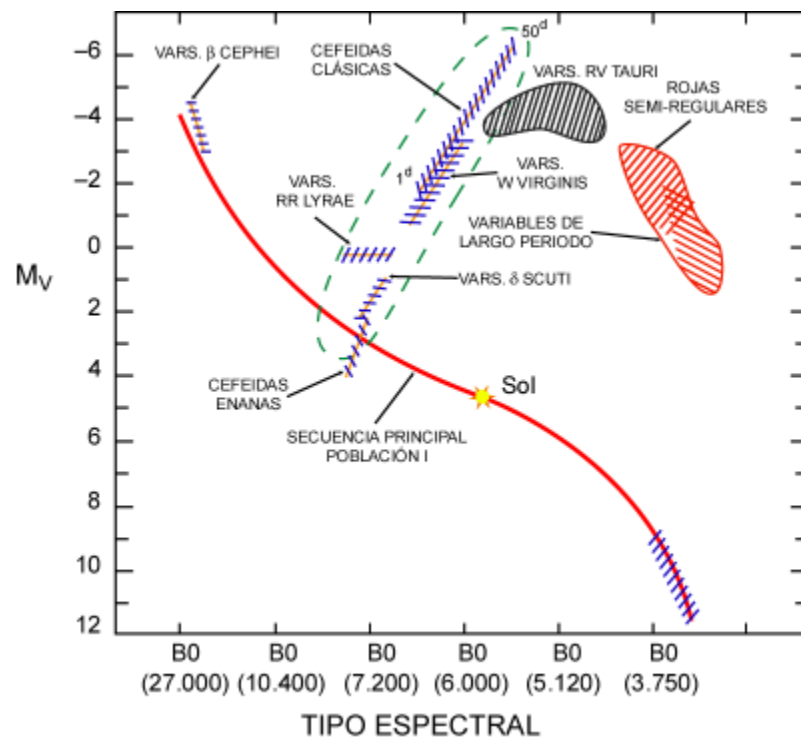
Period 31.415 days. Range 1.22 pg mag.
 Epoch J.D. 2422257.0 Median Mag (pg) = 18.6 ±

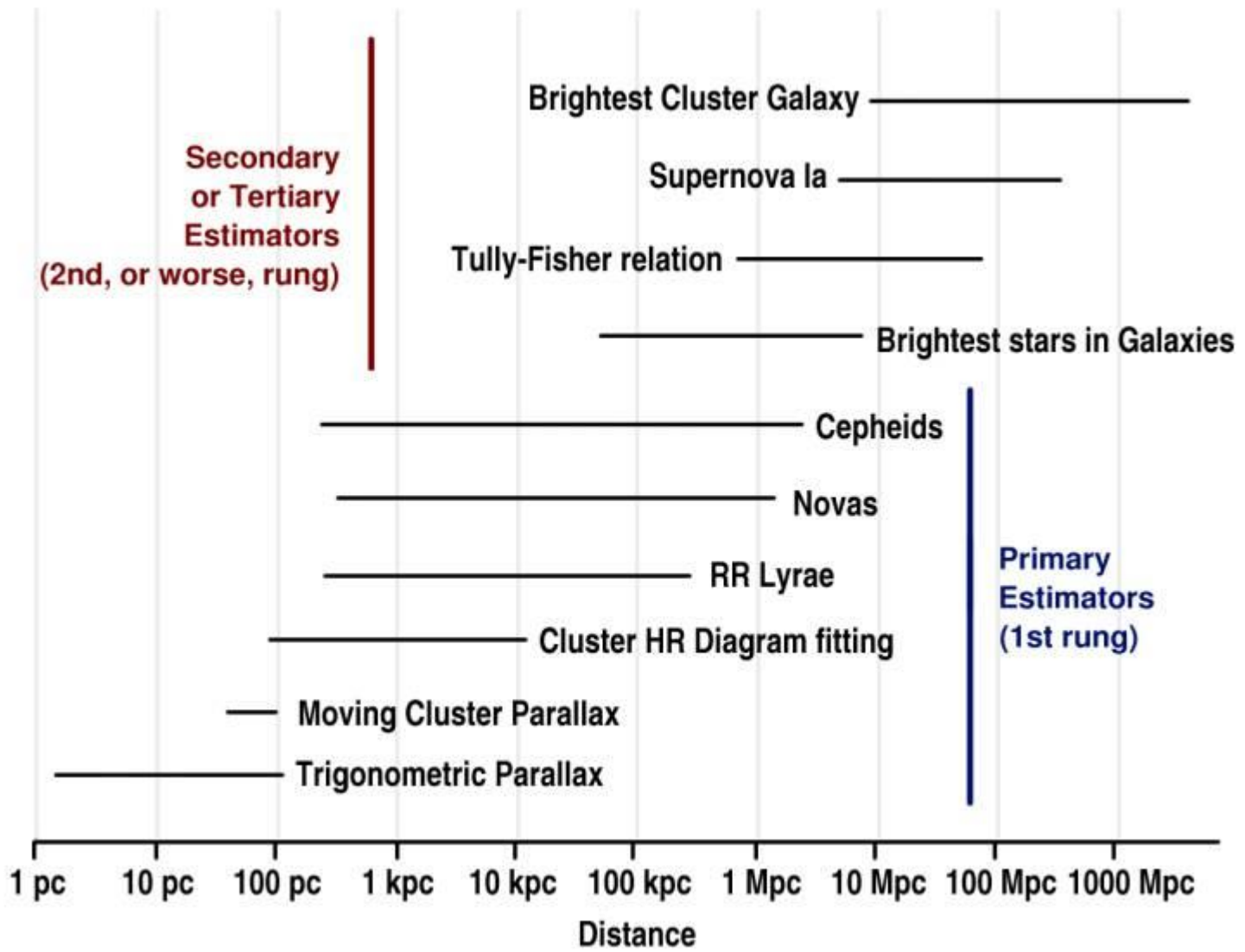
I believe the range and median magnitude are nearer to 1.0 and 18.5 respectively. A reasonable color index is +0.9. Then,
 $M = -5.0$ (from the period)
 distance = 220,000 parsecs (subject to reduction of star
 & dimmed by intervening nebulosity.)







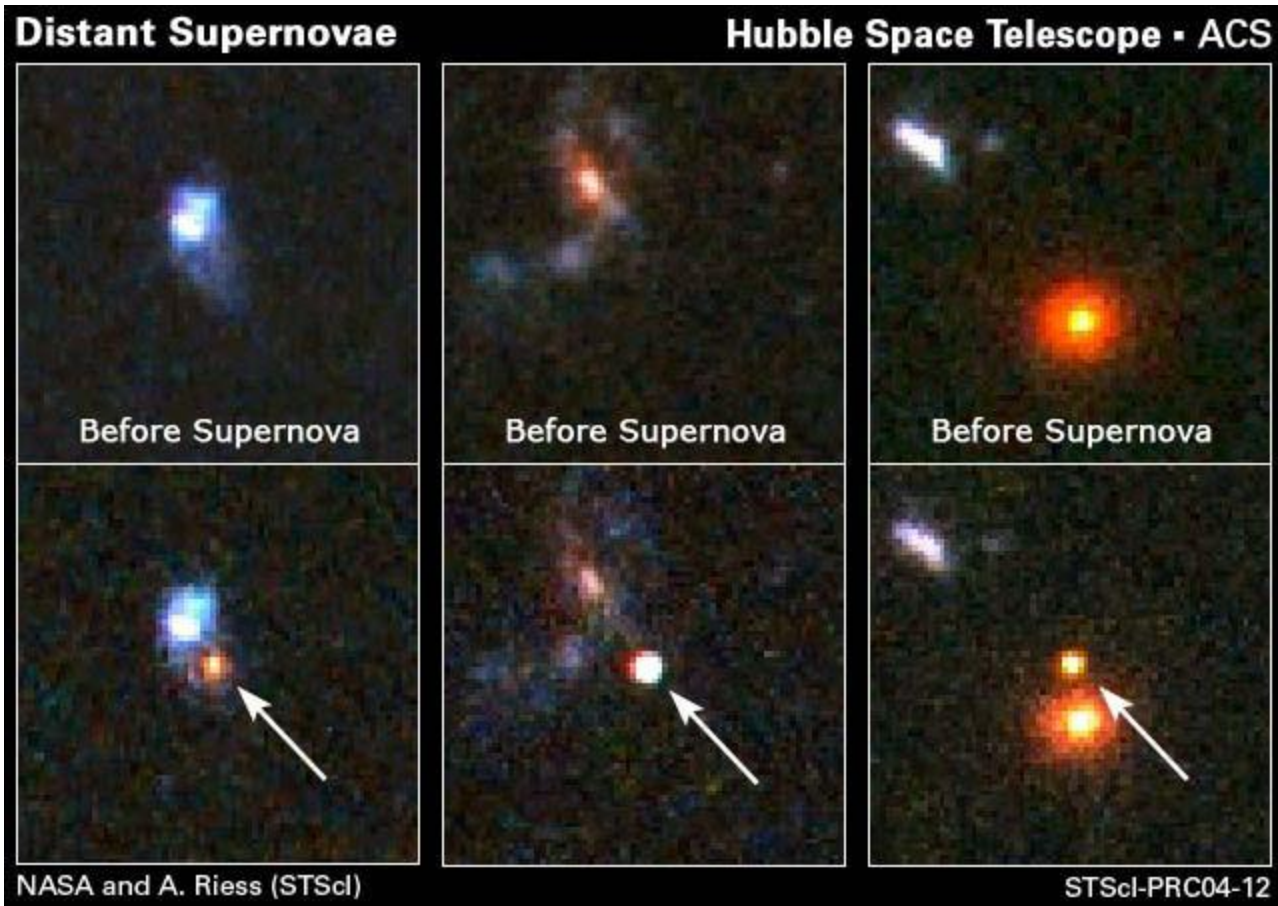




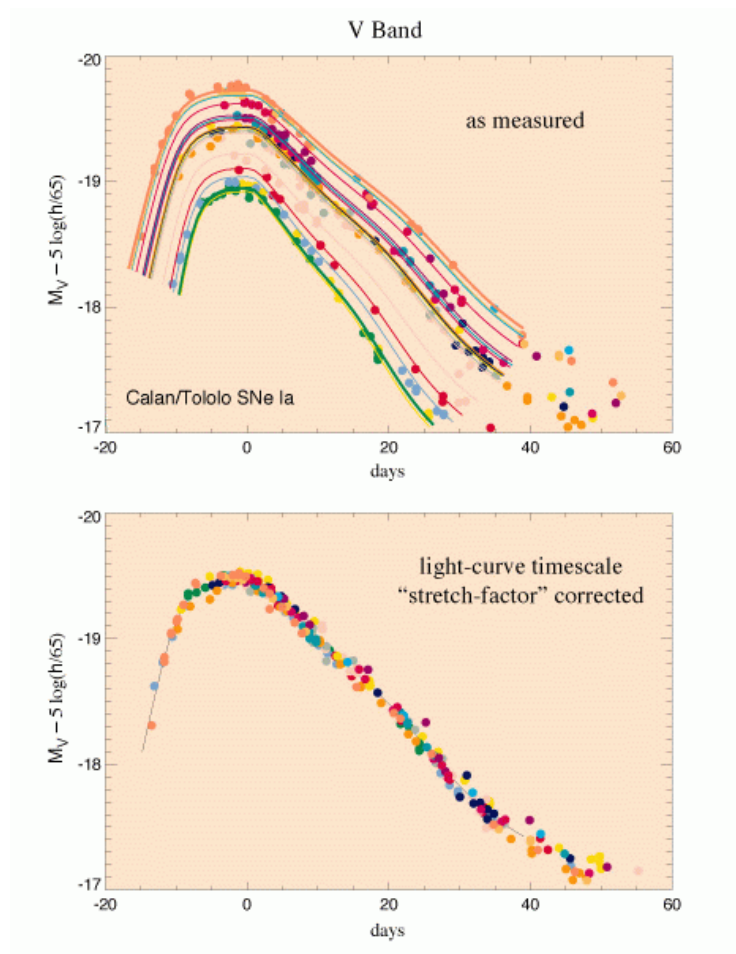
SN 1994D em NGC 4526



Supernovas do tipo Ia: imagens



Supernovas do tipo Ia: curvas de luz



Origem das supernovas do tipo Ia: Sistema binário com anã branca (variável cataclísmica)

