“Проблясващата звезда” EF Aql

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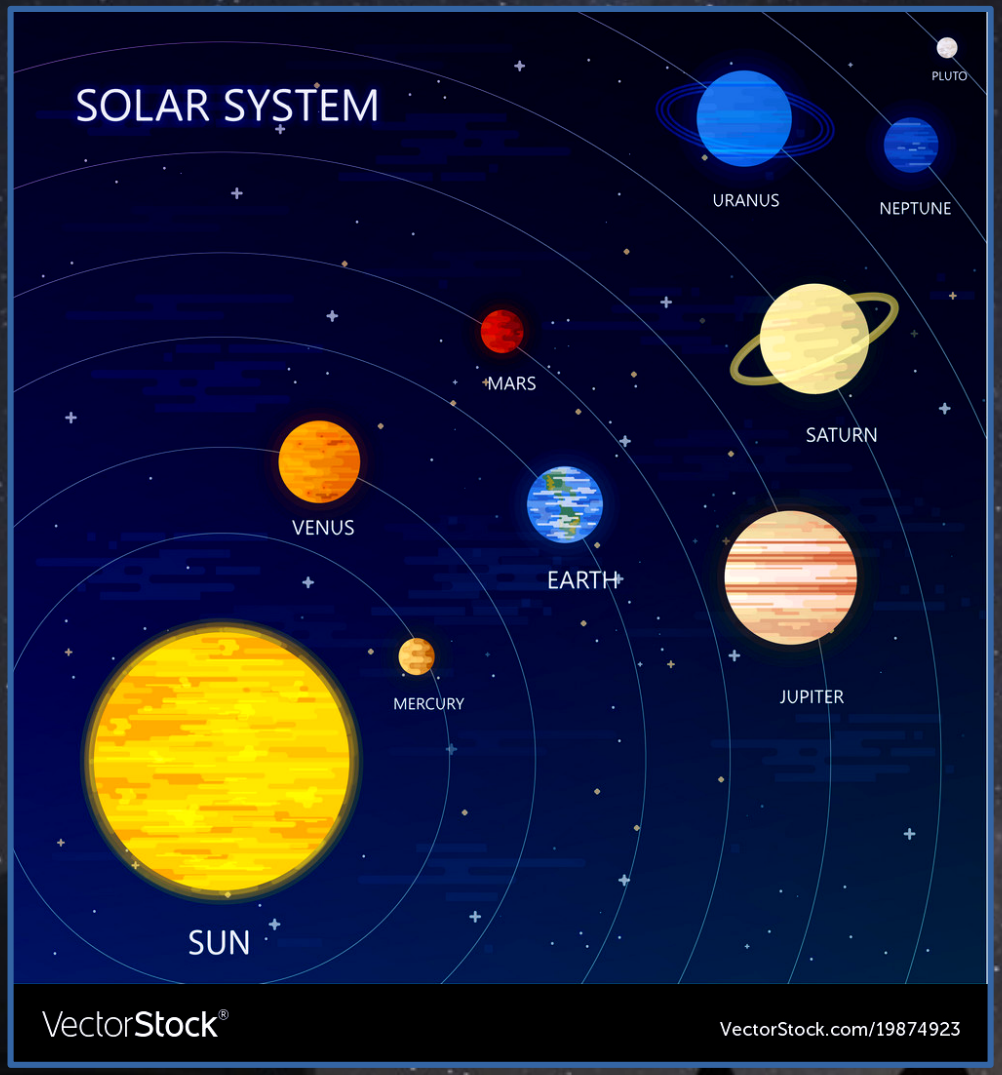
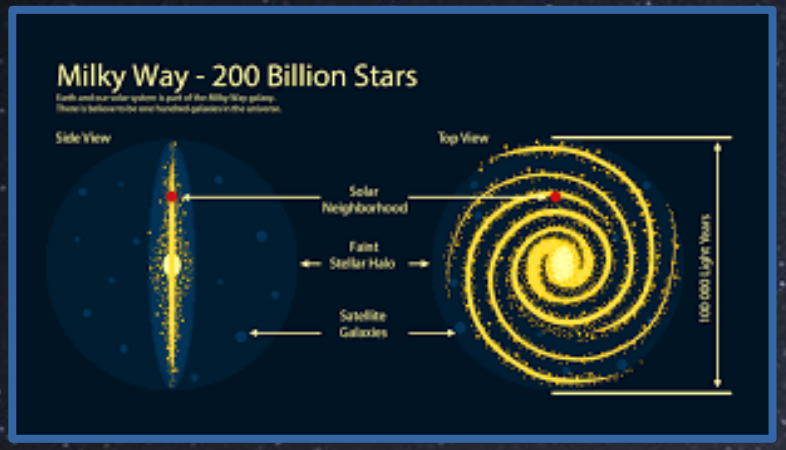
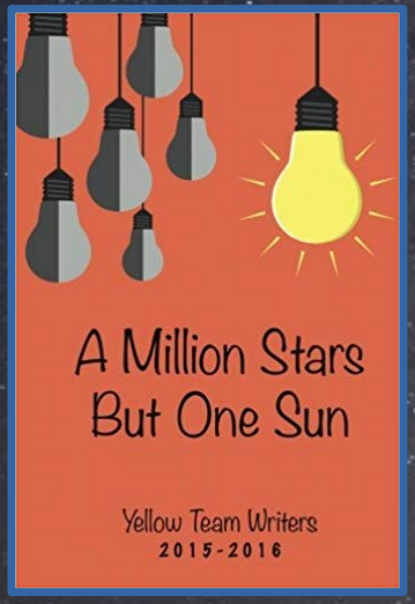
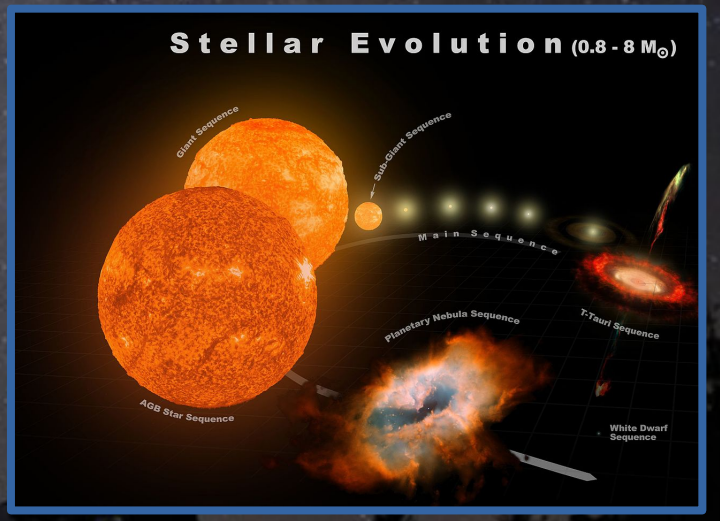
„100 часа астрономия“, София Тех Парк

Откъде изследваме Вселената?



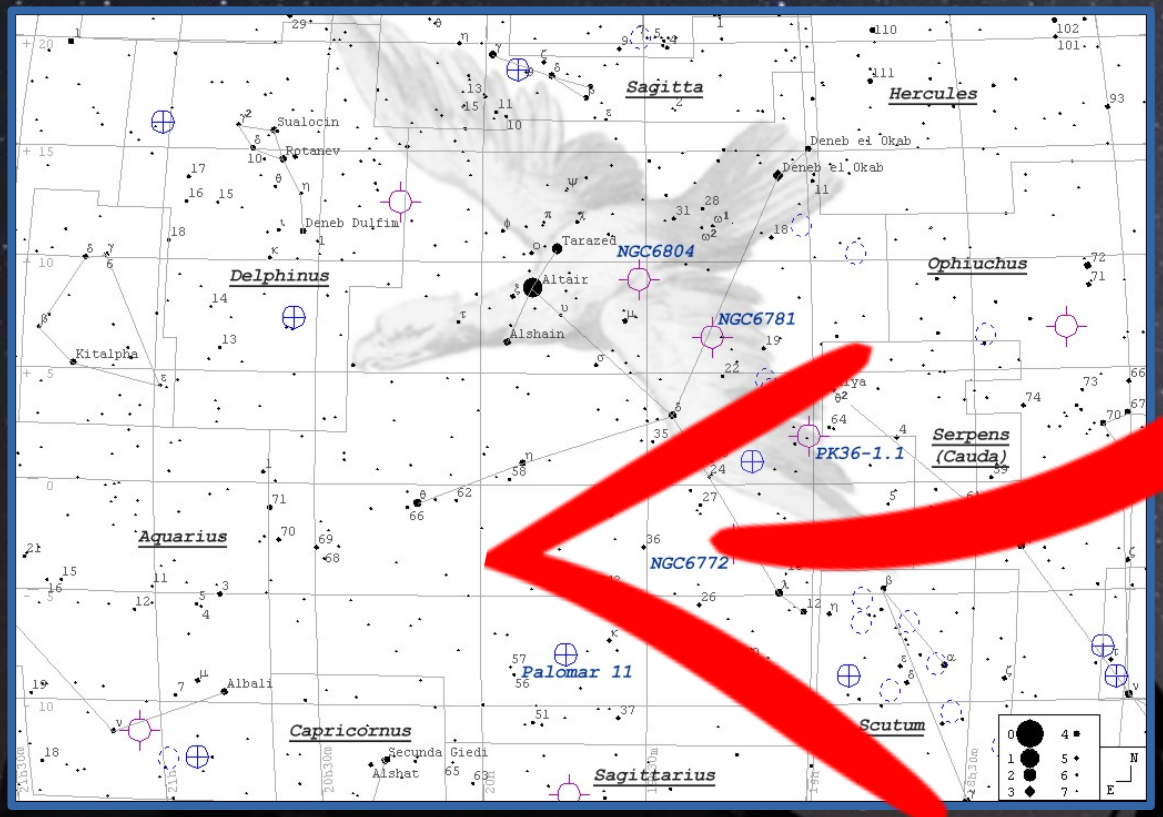

Milky Way - 200 Billion Stars
Side View
Top View
Solar Neighborhood
Faint Stellar Halo
Satellite Galaxies
100 000 Light Years

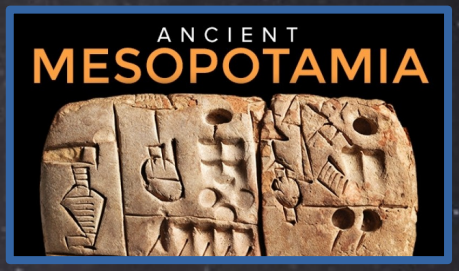

A Million Stars But One Sun
Yellow Team Writers
2015-2016


Stellar Evolution (0.8 - 8 $M_\odot$)
Giant Sequence
Sub-Giant Sequence
Main Sequence
Planetary Nebula Sequence
T-Tauri Sequence
AGB Star Sequence
White Dwarf Sequence

Къде се намира “проблясващата” звезда EF Aql

Разстояние ~ 11 000 светлинни години





С какво е интересна звездата?

Около 200 известни симбиотични звезди

Само при 11 се наблюдават проблясвания (фликеринг)

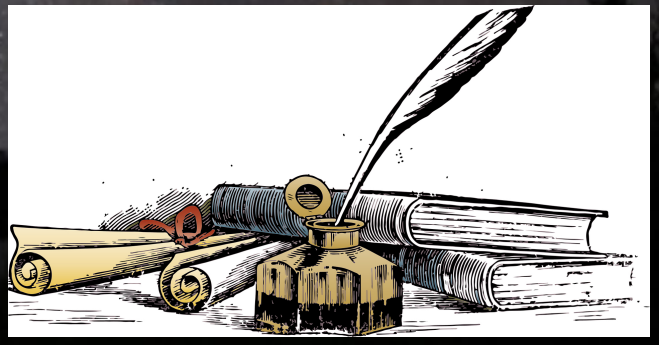
Как изследваме звездите ?

Наблюдения

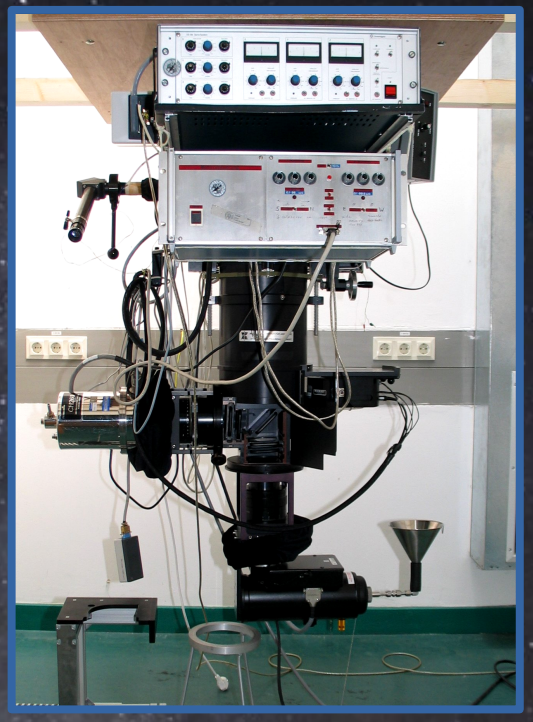
Анализ на данни

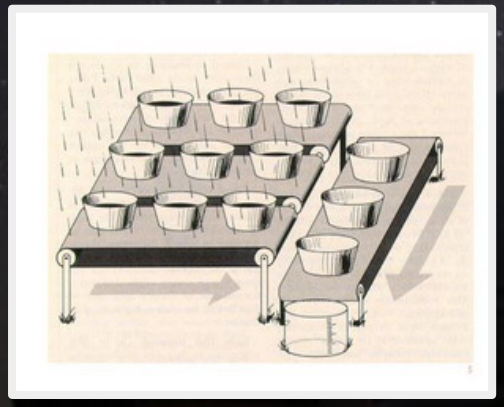
Интерпретиране на резултатите

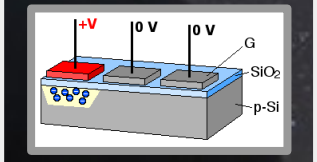
Публикуване на резултатите

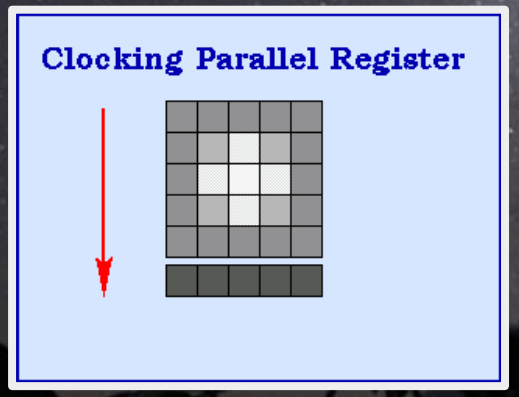


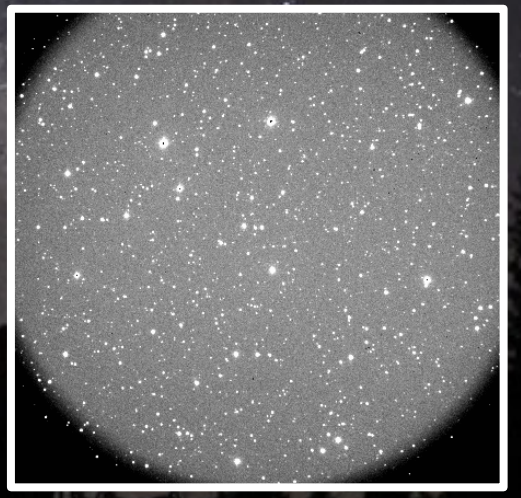
Наблюдения





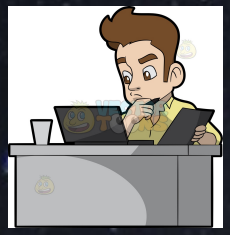







2 м. RCC телескоп
RC фокус
Балансна тежест
Coude-фокус спектрограф


IDEA
GENERATOR



Обработка и анализ на данни

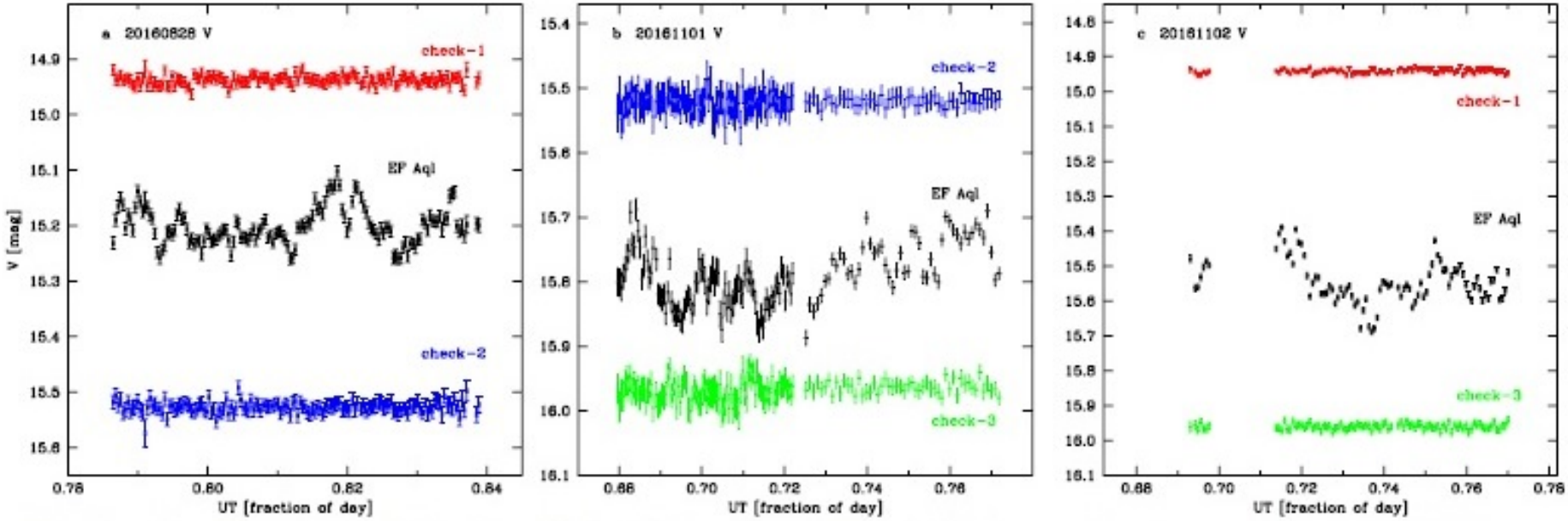
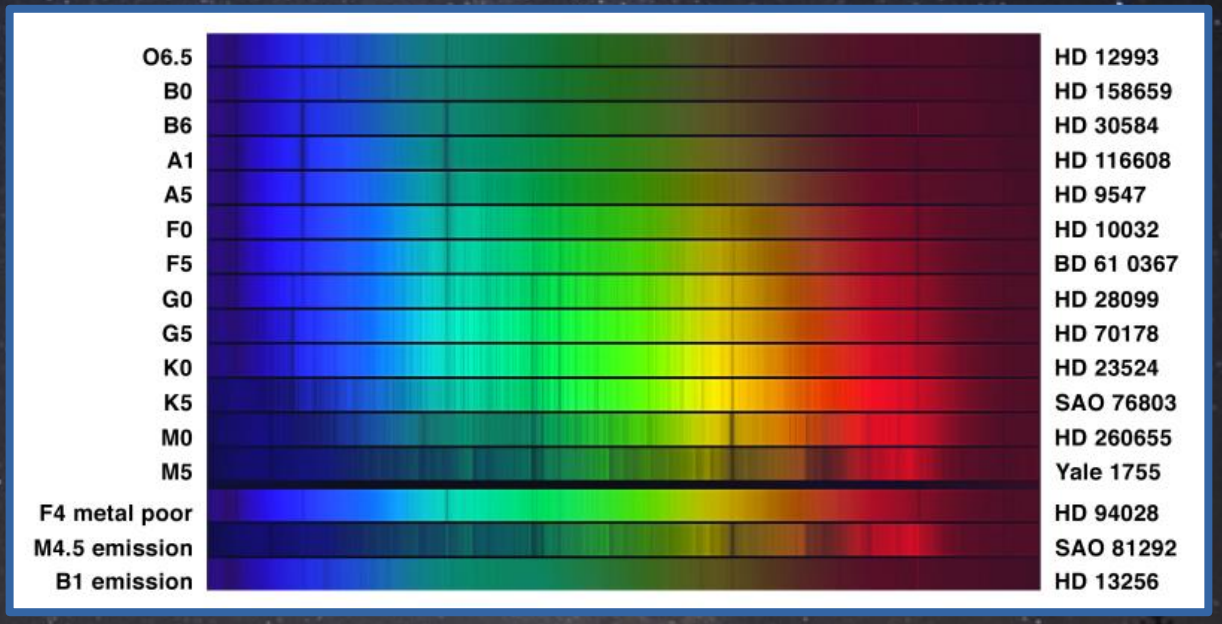


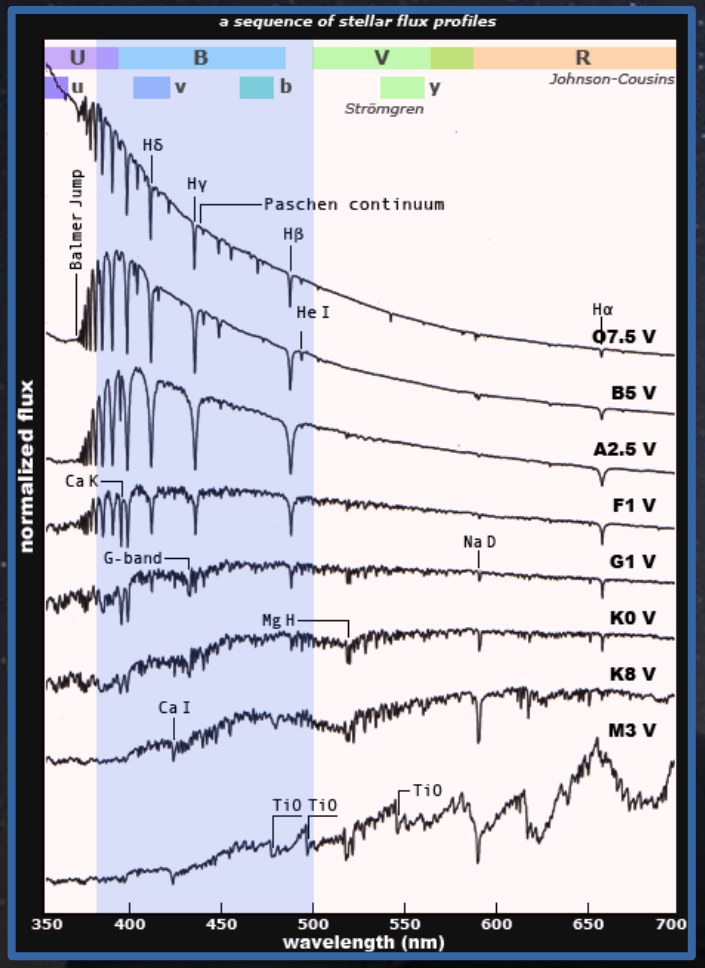
Fig. 1 Detection of optical flickering of EF Aql. In each panel two check stars are also shown on the same scale. It is clearly seen that EF Aql varies with an amplitude larger than 0.15 mag.

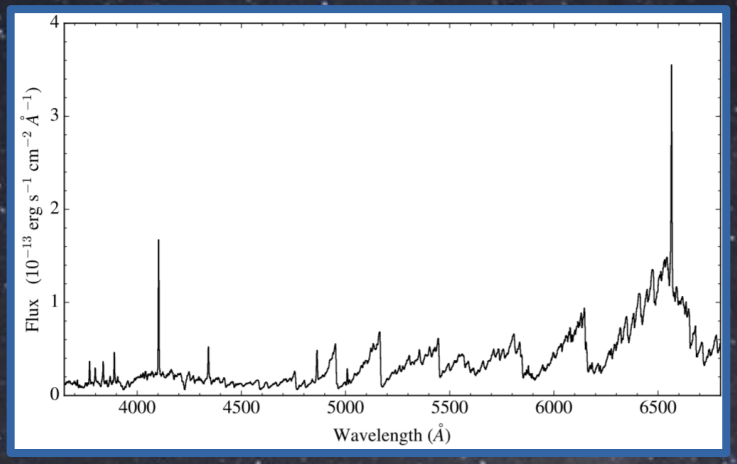
Интерпретиране на резултатите

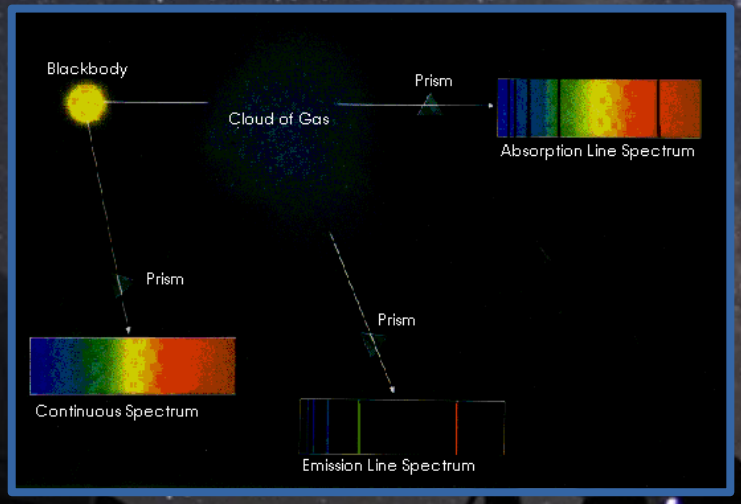
“Розетският камък” в астрономията

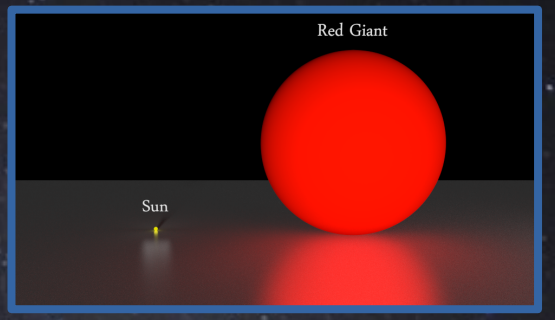


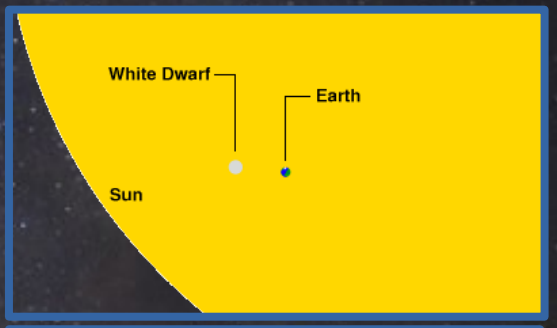
Какво научаваме от “розетския камък”



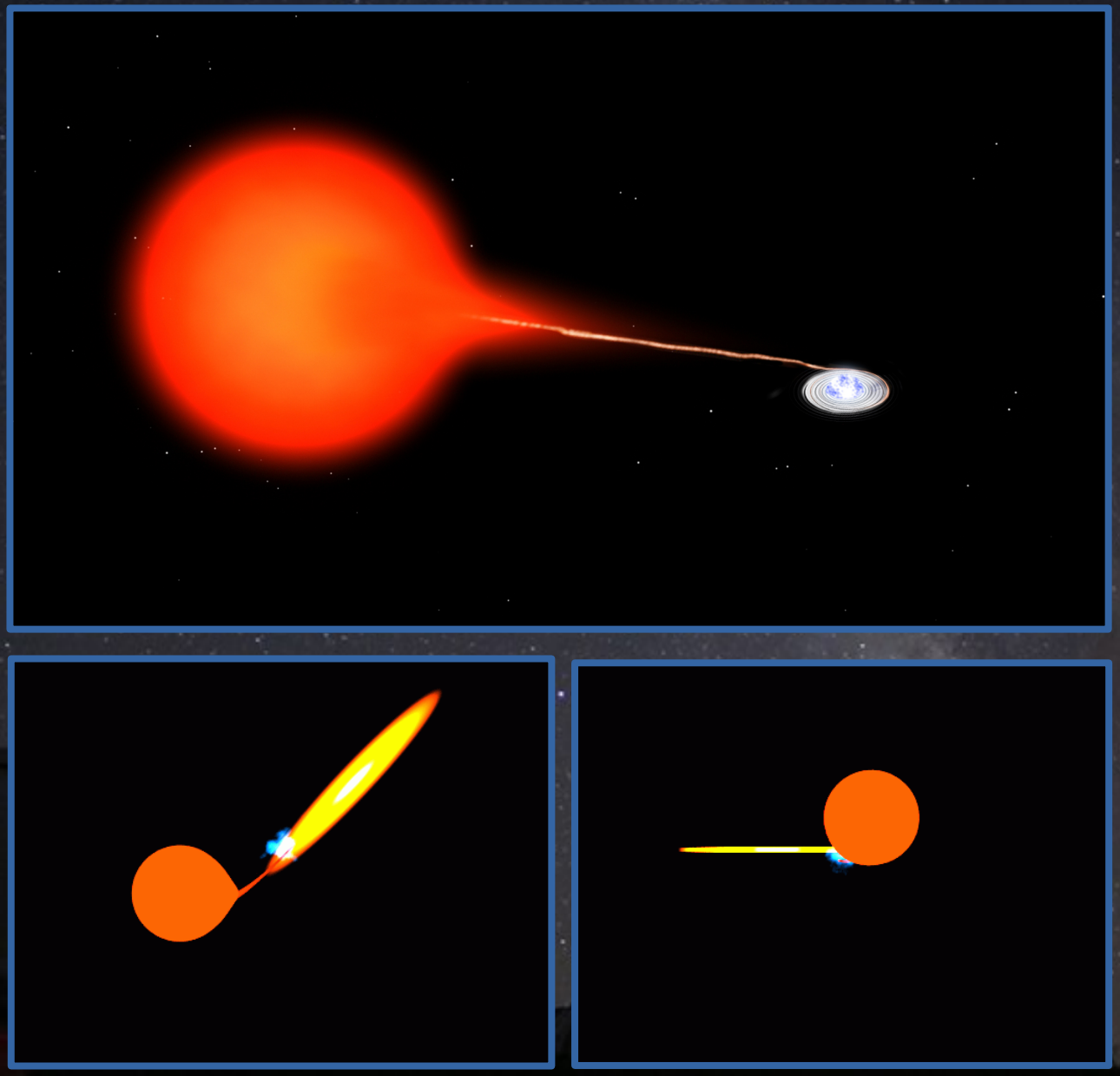




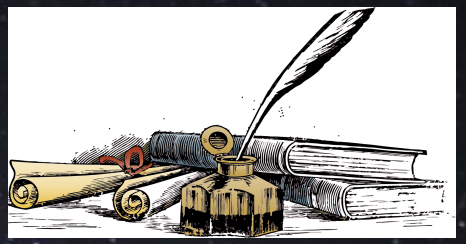




Какви са причините звездата да увеличава блясъка си със 100 % за ~ 15 минути ?



Публикуване на резултатите



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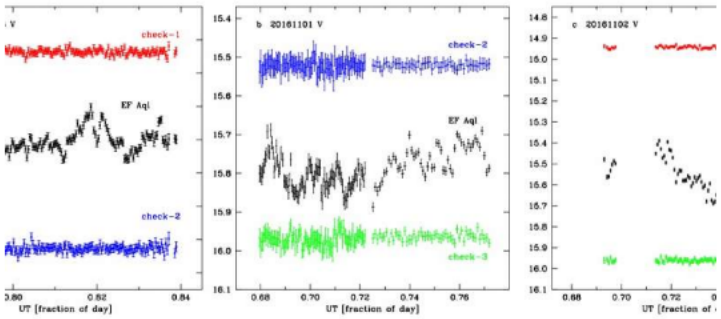
Astronomers detect flickering from the star EF Aquilae

March 1, 2017 by Tomasz Nowakowski report



Detection of optical flickering of EF Aql. In each panel two check stars are also shown on the same scale. It is clearly seen that EF Aql varies with an amplitude larger than 0.15 mag. Credit: Zamanov et al., 2017.

(Phys.org)—European researchers have detected optical flickering from a distant symbiotic star known as EF Aquilae (EF Aql for short). The new findings, presented Feb. 27 on the arXiv pre-print server, offer important hints on the nature and composition of this binary star.

Located about 11,000 light years away from the Earth, EF Aql is a symbiotic star, a member of the symbiotic Mira subgroup. Symbiotic stars are long-period interacting binaries consisting of an evolved giant transferring mass to a hot compact object – usually a late-sequence red giant providing material to a white dwarf. Although EF Aql was identified as a variable star in 1925, it was confirmed as a symbiotic star in 2016. However, this star has not been thoroughly studied yet, and its nature is still poorly understood.

To gain more insights about EF Aql, a team of astronomers led by Radoslav Zamanov of the National Astronomical Observatory (NAO) Rozhen in Bulgaria has recently carried out a series of CCD photometric observations of this star. For this job, they employed five telescopes equipped with CCD cameras between August and November 2016—four located in Bulgaria and one in Spain.

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140 м
120 м
100 м
80 м
60 м
40 м
20 м

“Над нас се простираше небето, цялото изпъстрено със звезди, и често се случваше да лежим по гръб, да ги гледаме и да спорим дали са били направени, или просто са се случили.”

Марк Твен, „Хъкълбери Фин“