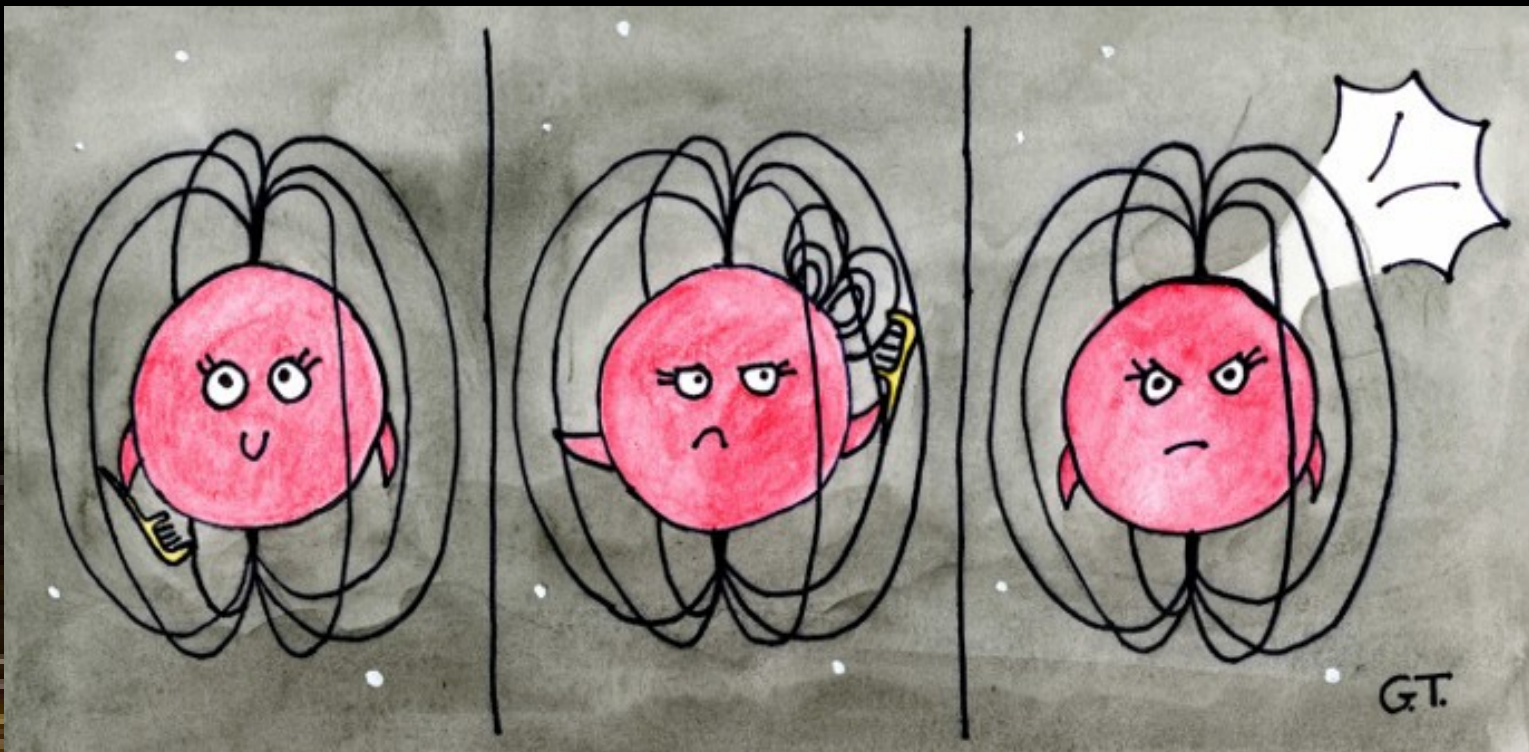


Звездни магнитни полета

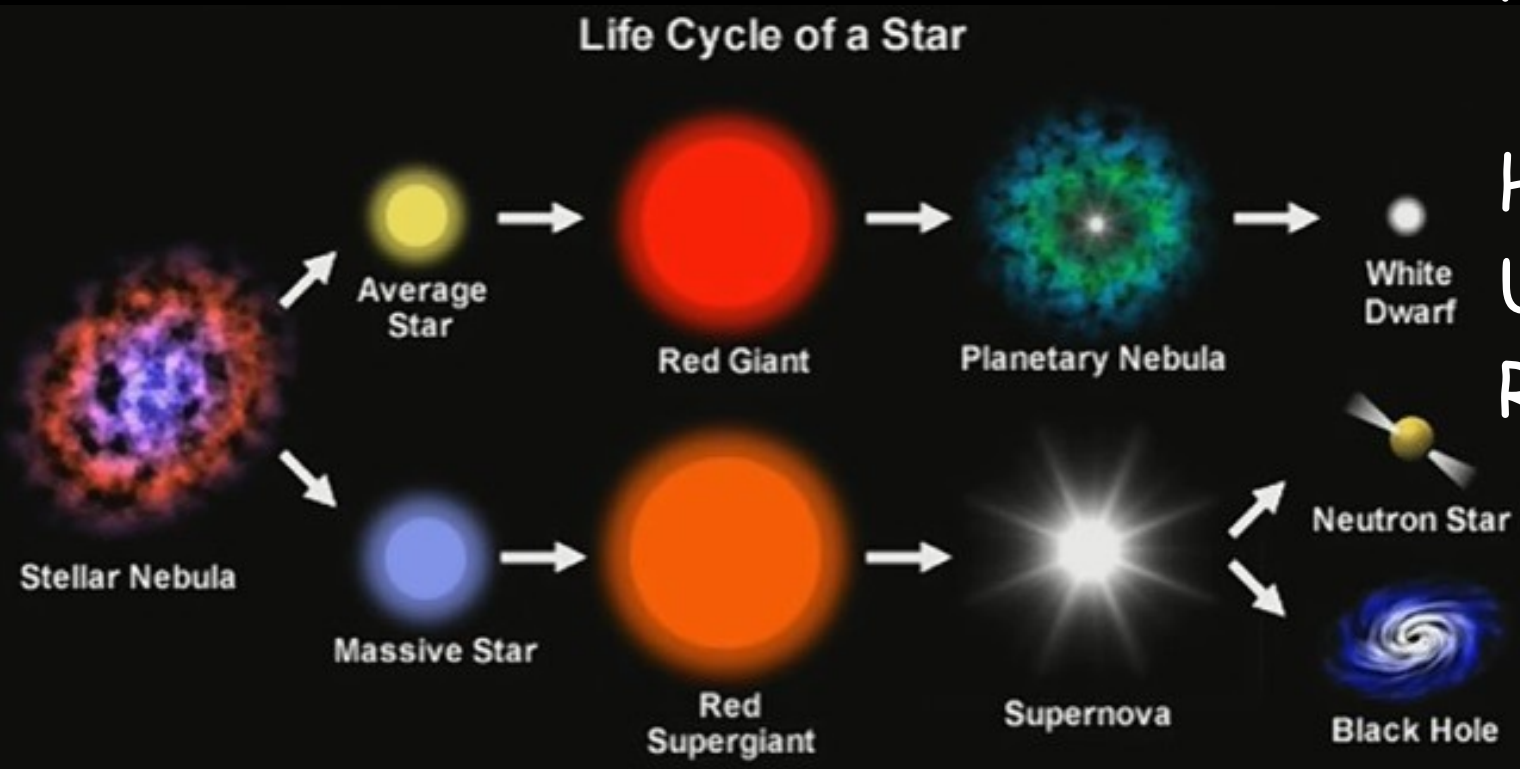
Светла Цветкова, ИА с НАО



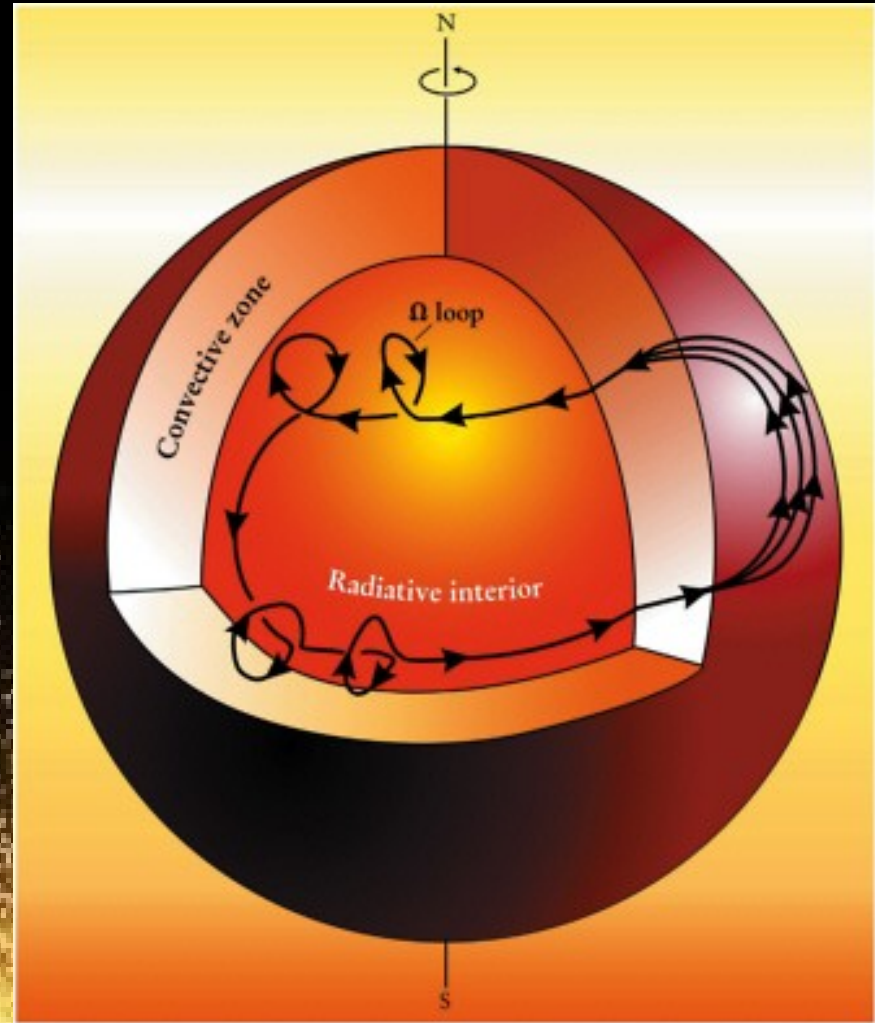
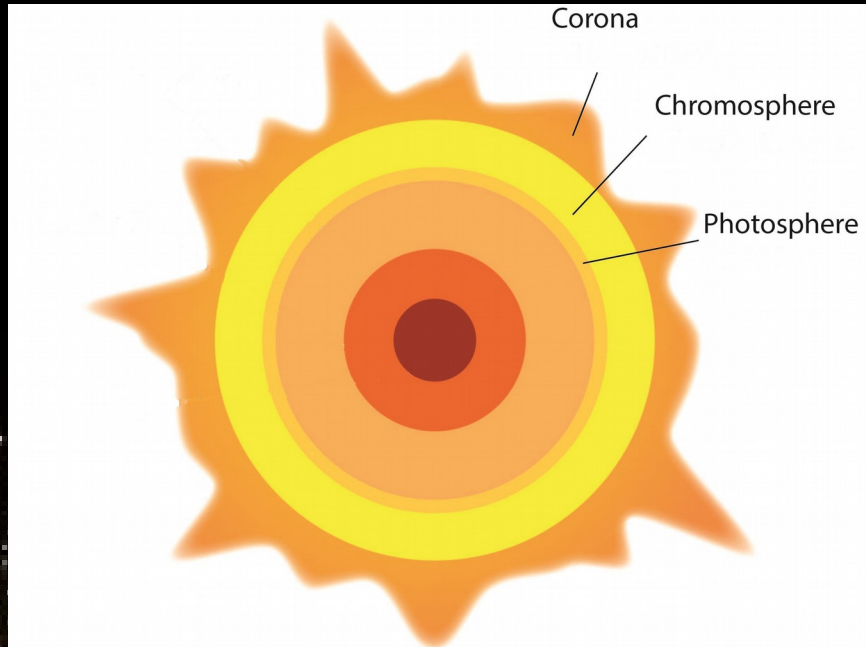
Какво е звезда?

Най-малката
EBLM J0555-57
 $R = 0.084 R_{\text{sun}}$

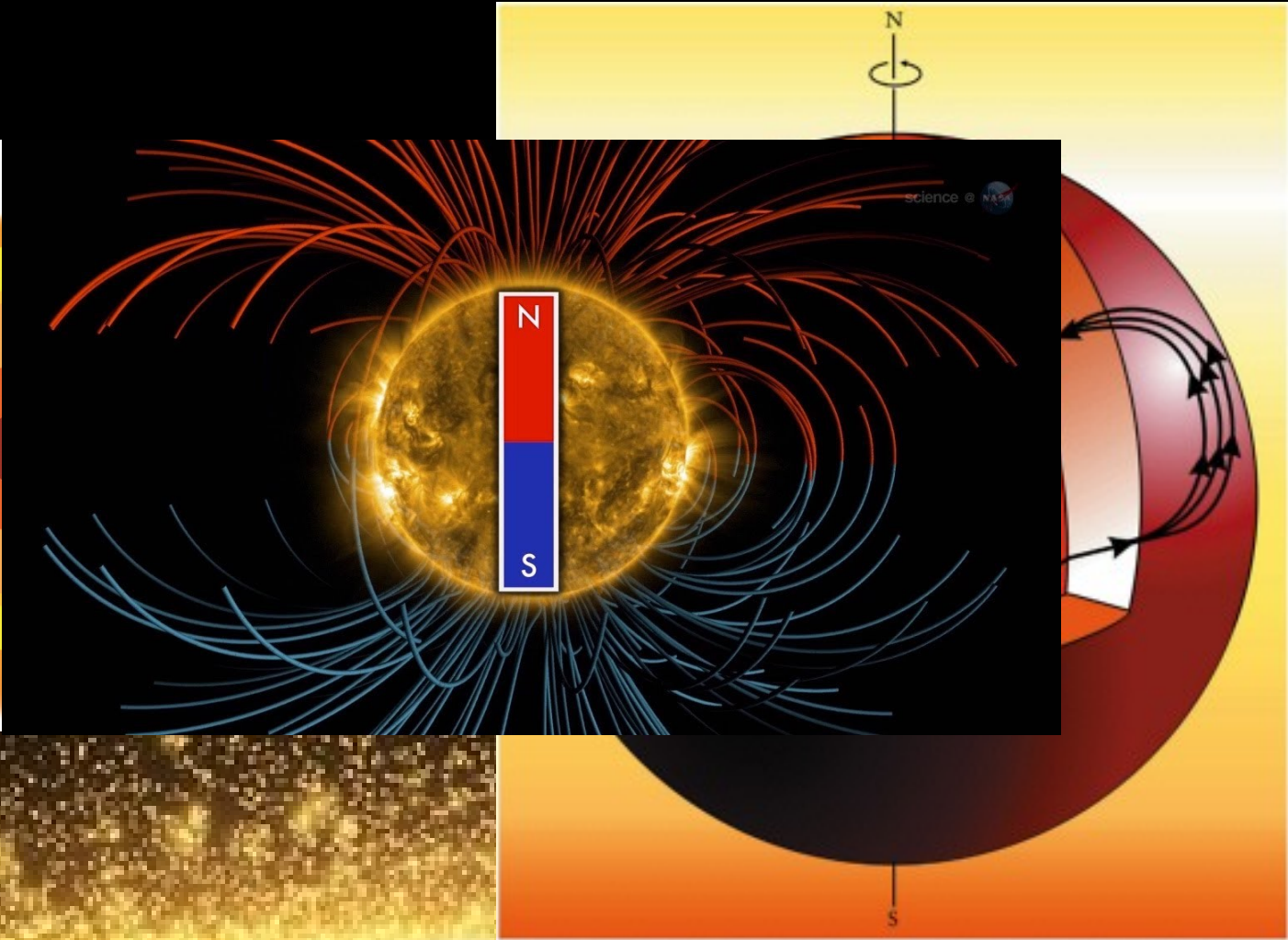
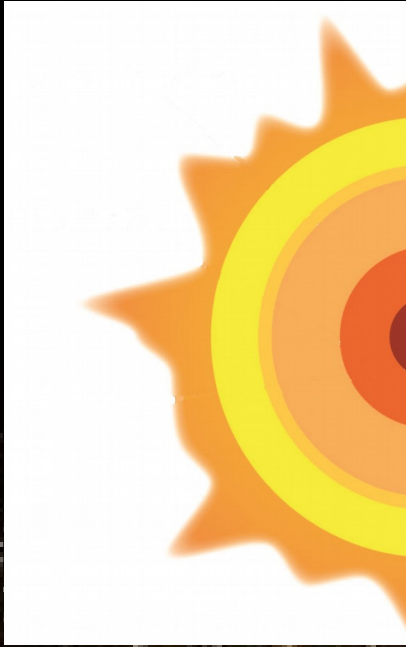
Най-голямата
UY Scuti
 $R = 1708 R_{\text{sun}}$



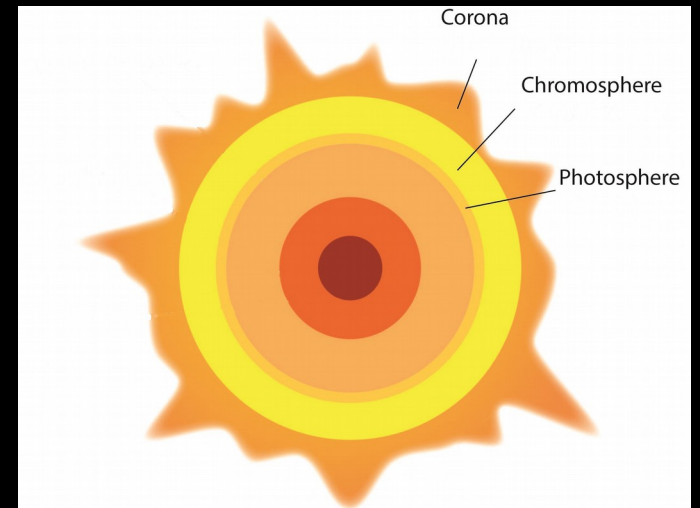
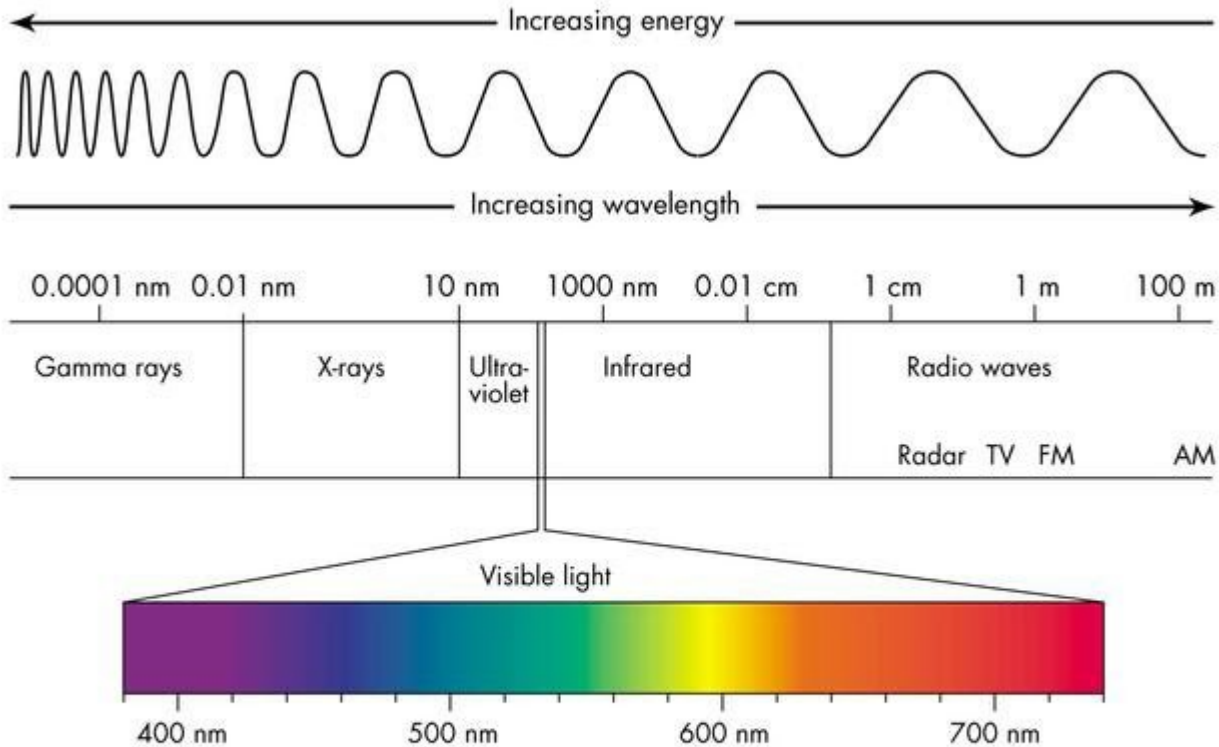
А какво е магнитно поле на звезда?



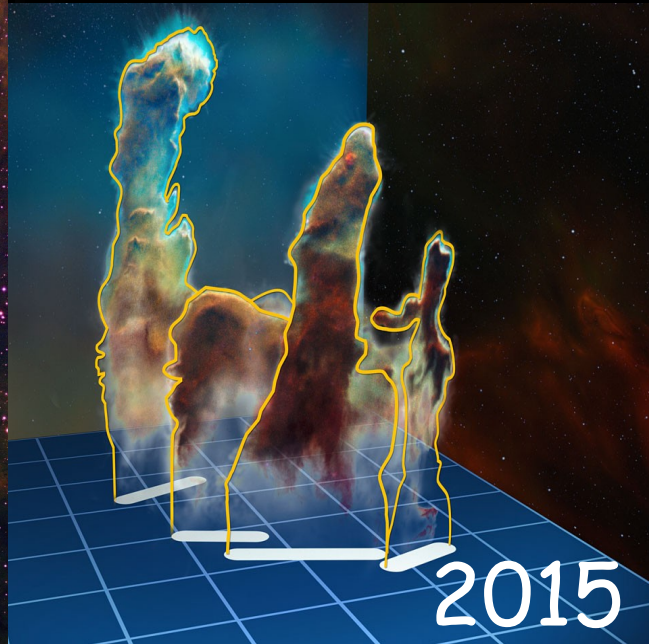
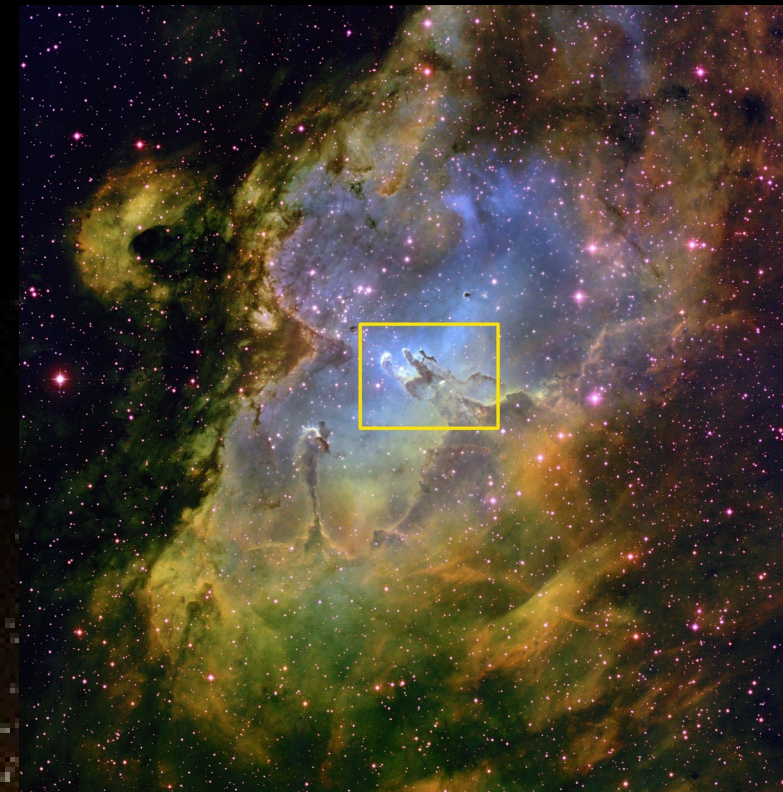
А какво е магнитно поле на звезда?



Електромагнитен спектър



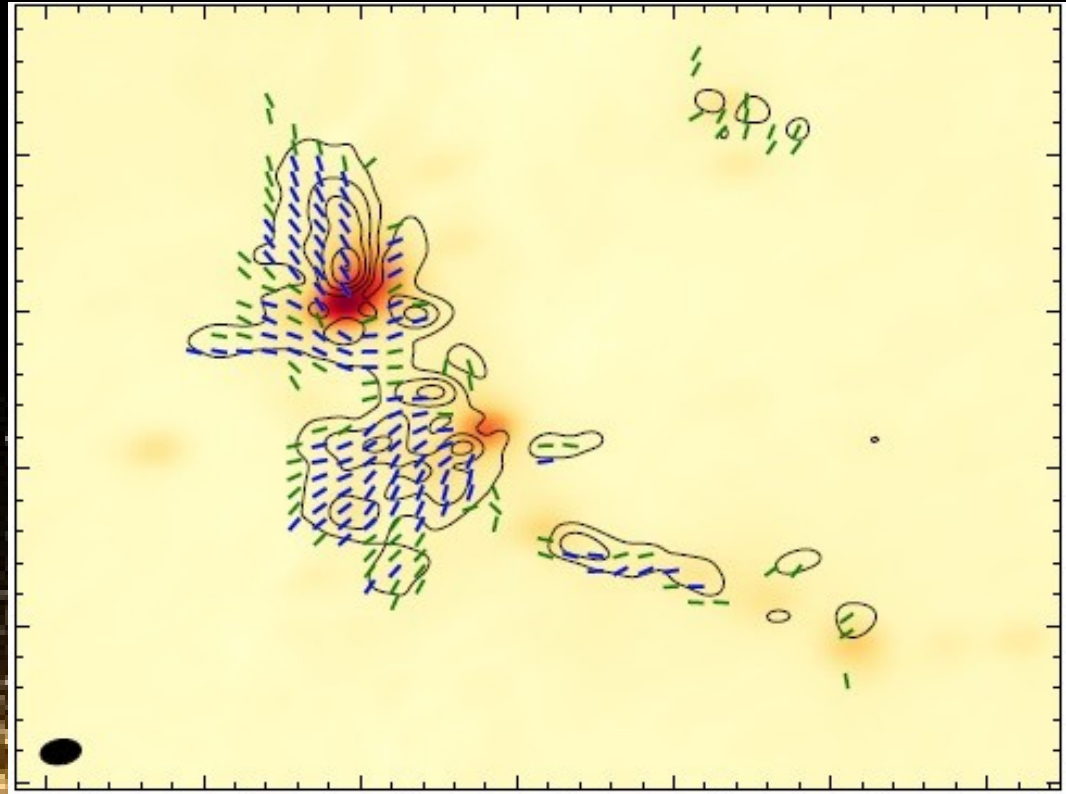
Област на звездообразуване Стълбове на сътворението (Pillars of creation)



Област на звездообразуване W43-MM1

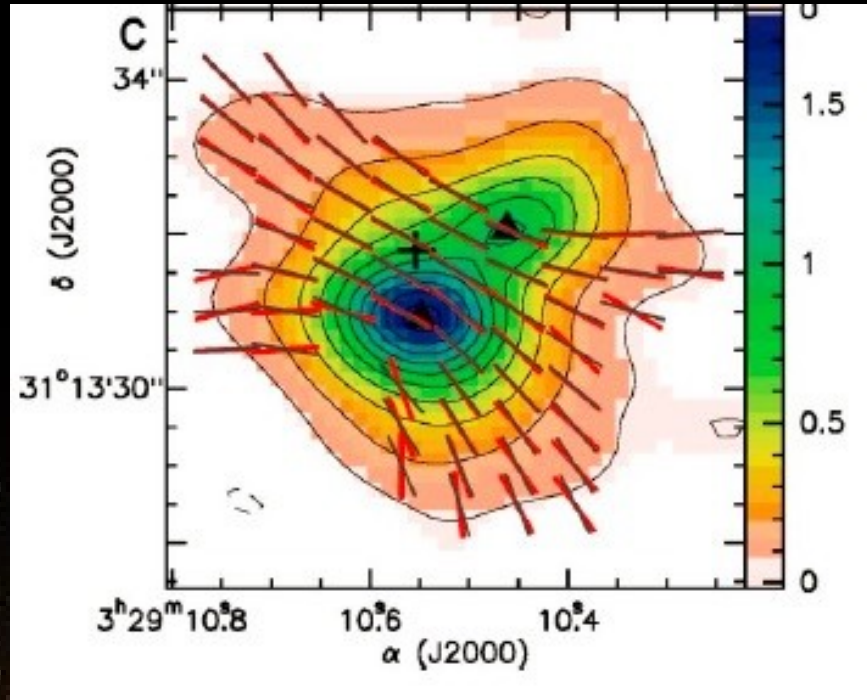
$M = 2128 M_{\text{sun}}$

Все още във фаза на
гравитационен колапс.

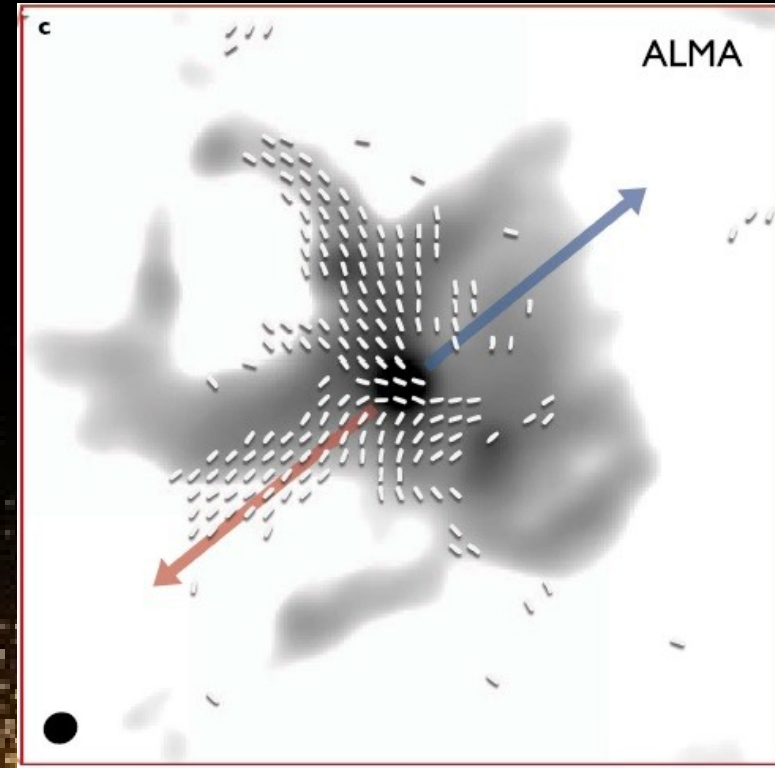


NGC 1333 IRAS 4A

Система от две протозвезди



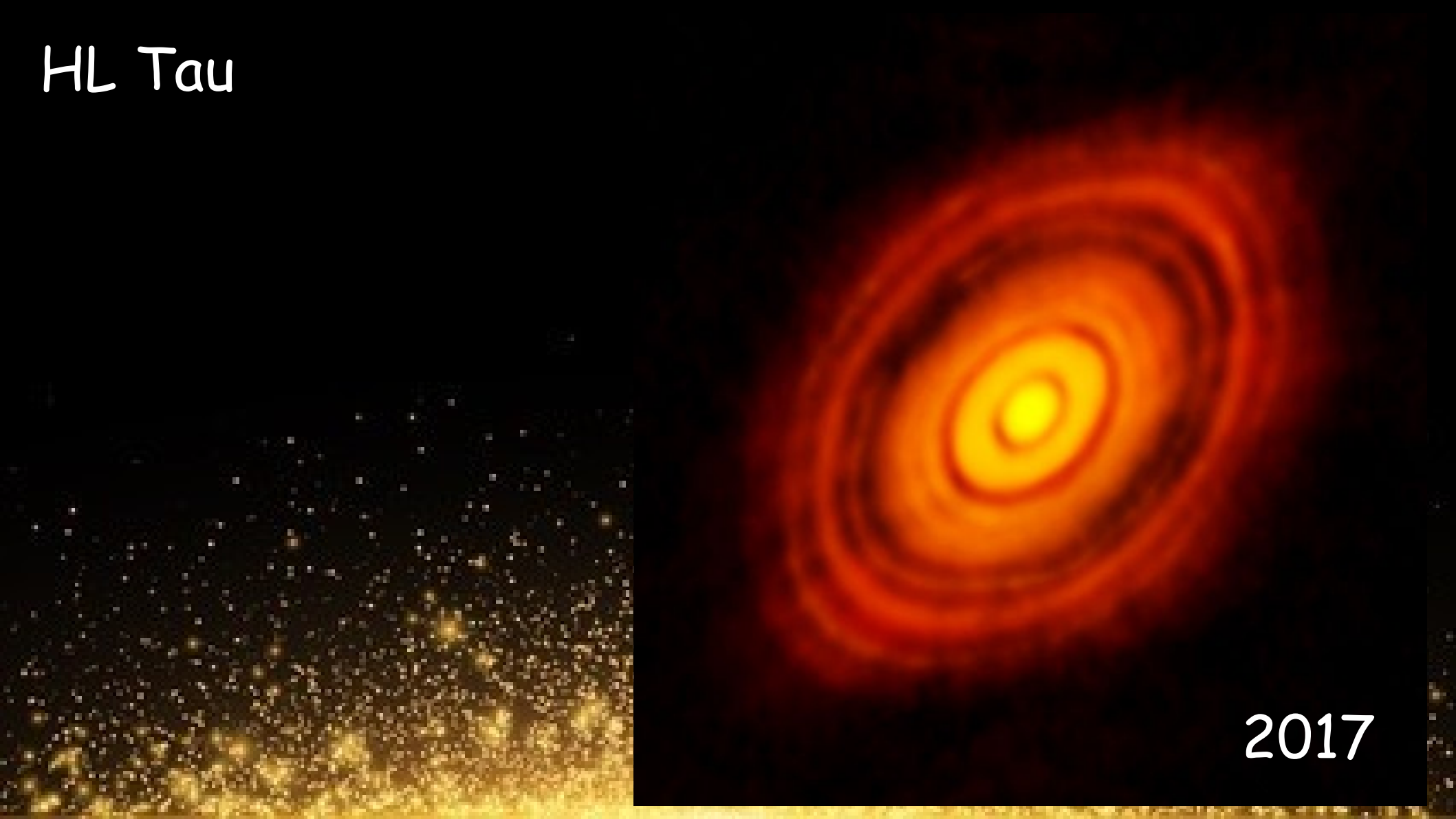
Ser-emb 8



1 Myr; 2700 AU; 500 AU

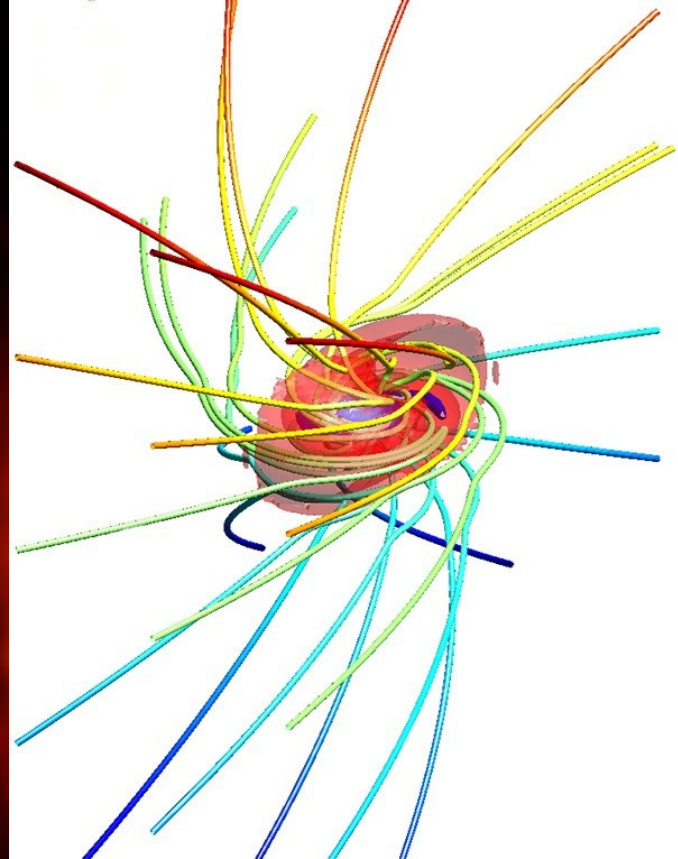
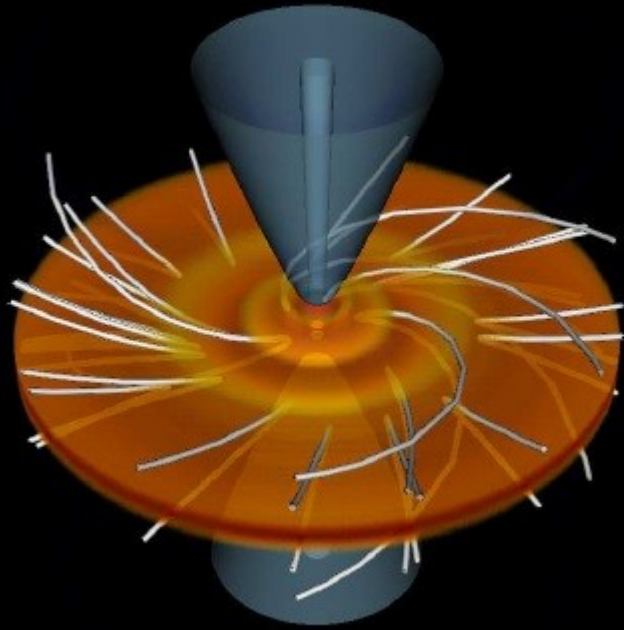
9.4 Msun в 100 000 AU

HL Tau

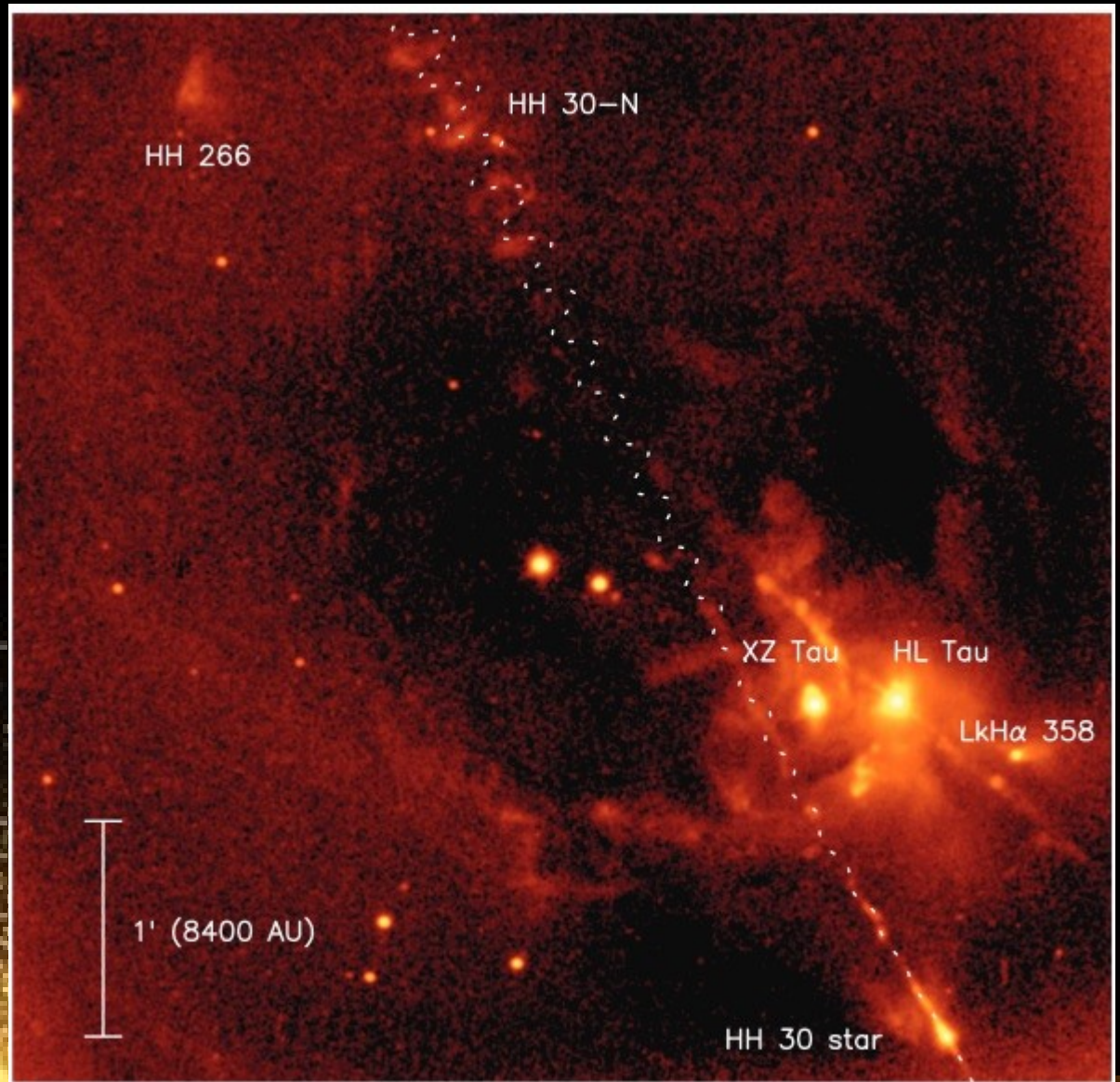
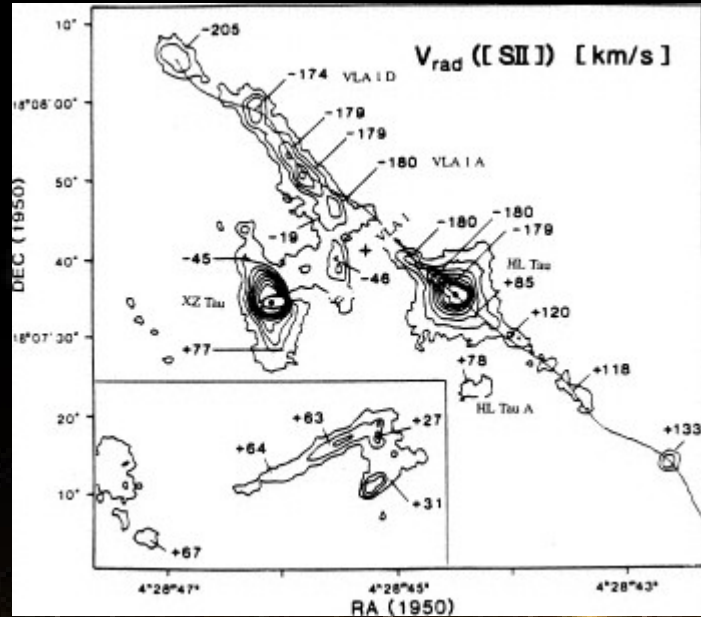


2017

HL Tau

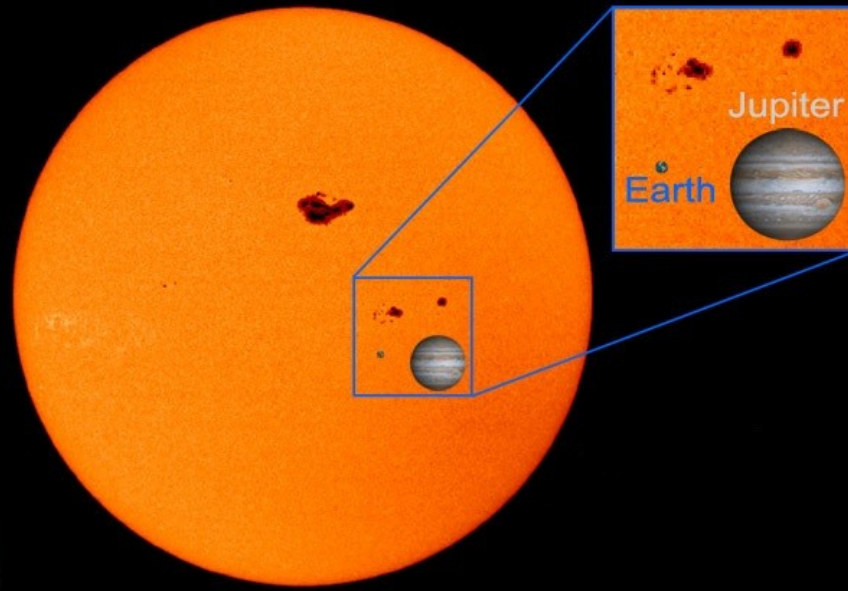


HL Tau



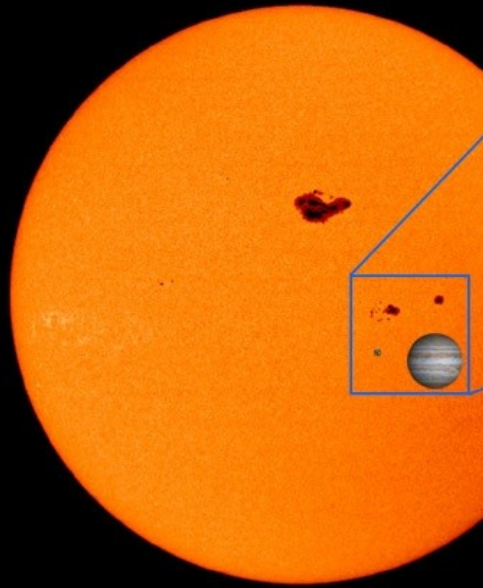
Слънце

- ♦ Петна
- ♦ Протуберанс
- ♦ Корона
- ♦ Коронални примки
- ♦ Коронални избухвания



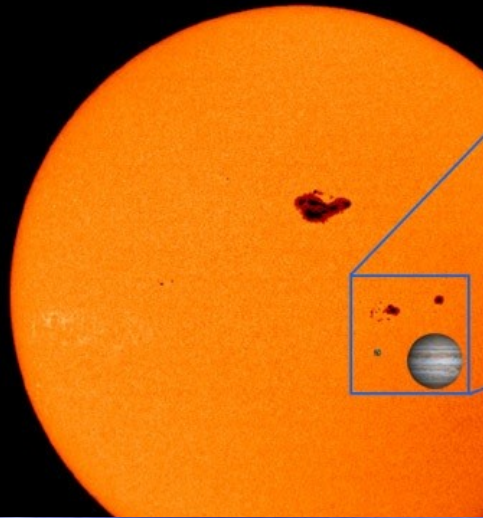
Слънце

- ♦ Петна
- ♦ Протуберанс
- ♦ Корона
- ♦ Коронални примки
- ♦ Коронални избухвания

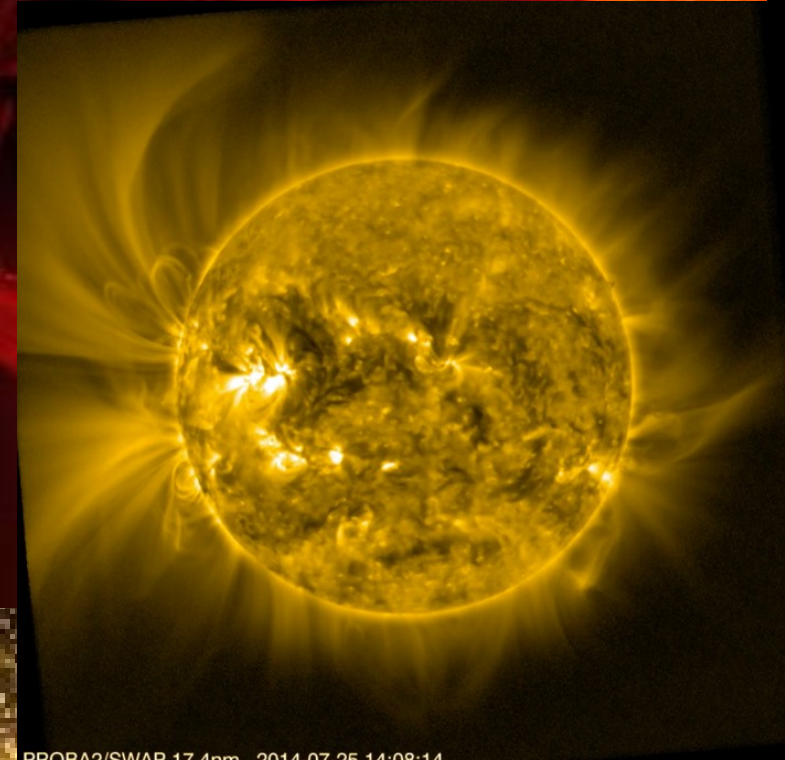
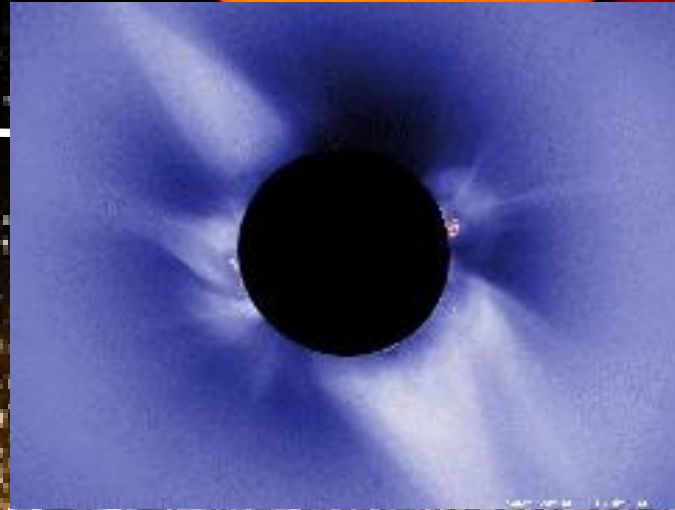


Слънце

- ♦ Петна
- ♦ Протуберанс
- ♦ **Корона**
- ♦ Коронални г
- ♦ Коронални избухвания



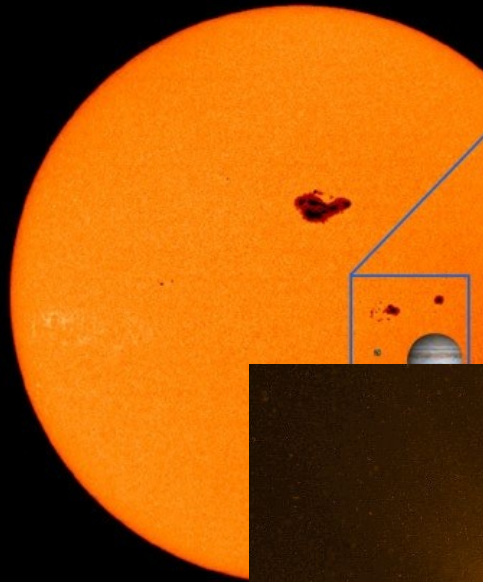
Approx. size of Earth →



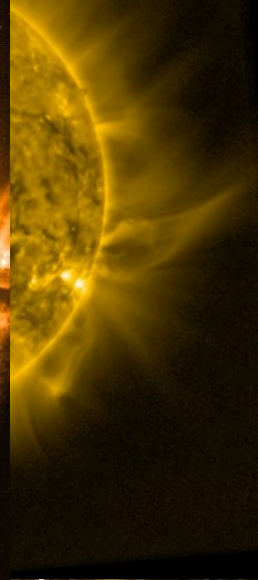
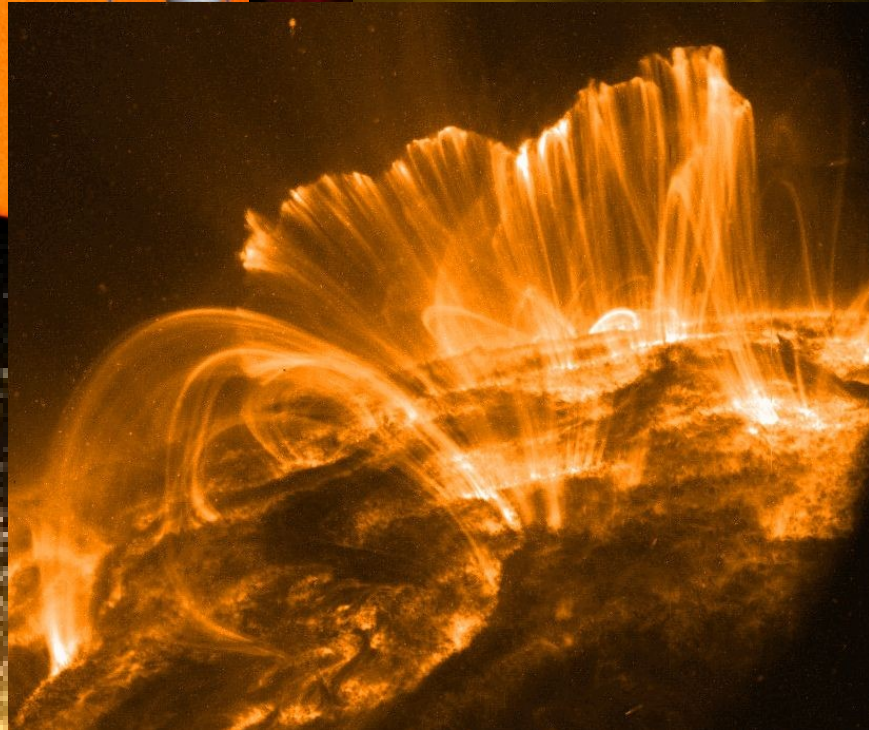
PROBA2/SWAP 17.4nm 2014-07-25 14:08:14

Слънце

- ♦ Петна
- ♦ Протуберанс
- ♦ Корона
- ♦ **Коронални примки**
- ♦ Коронални избухвания

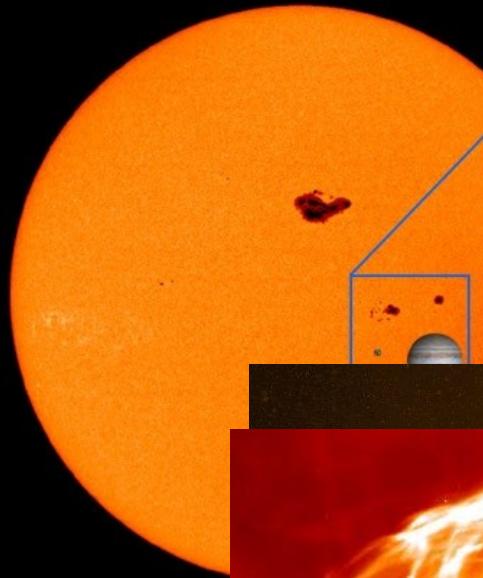


Approx. size of Earth →

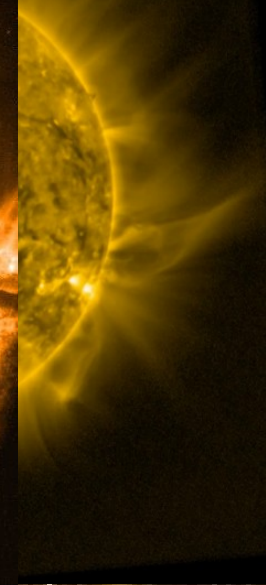
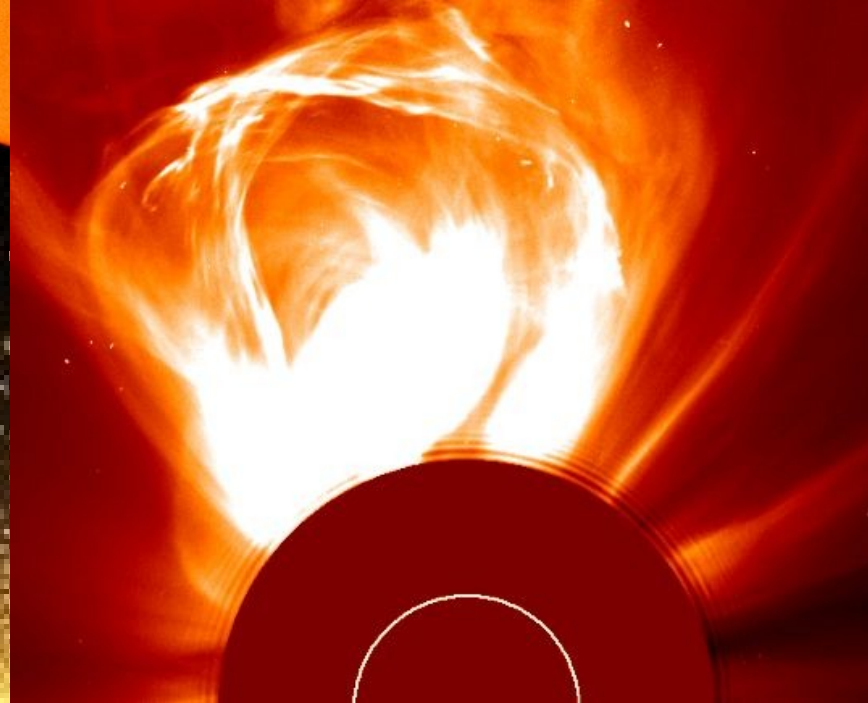


Слънце

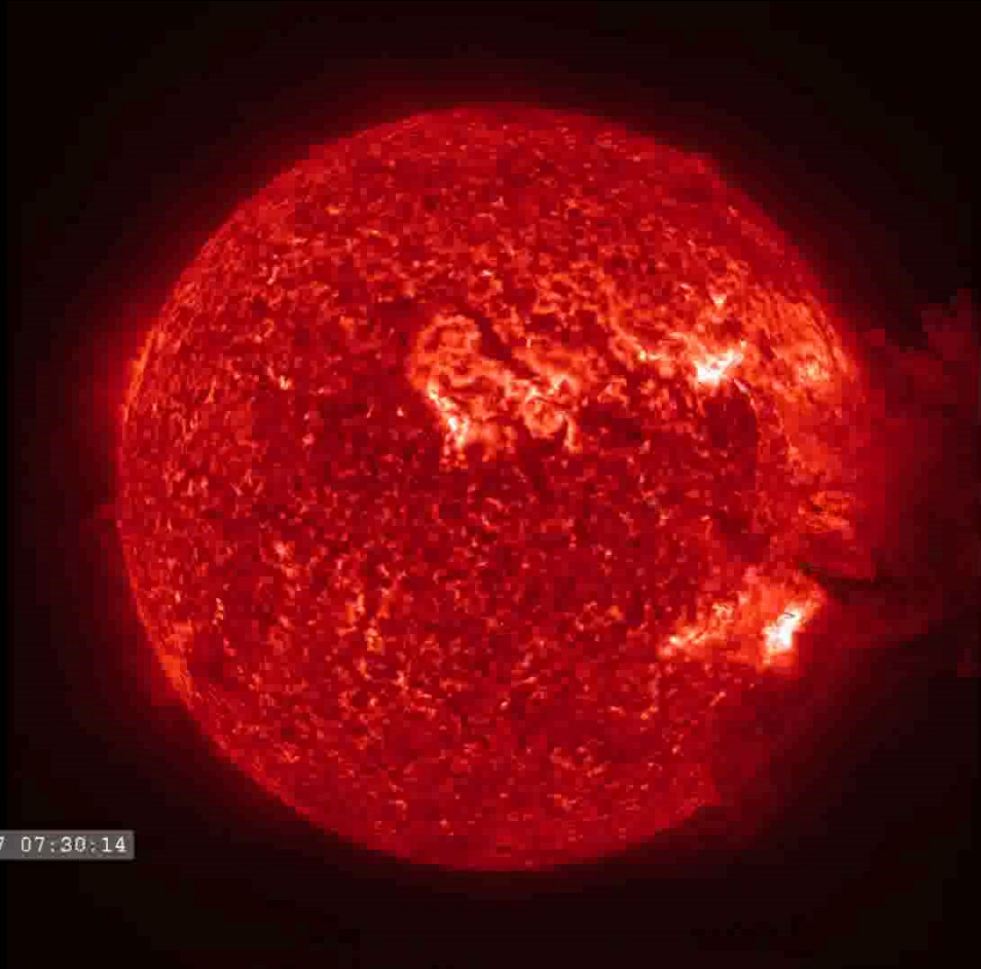
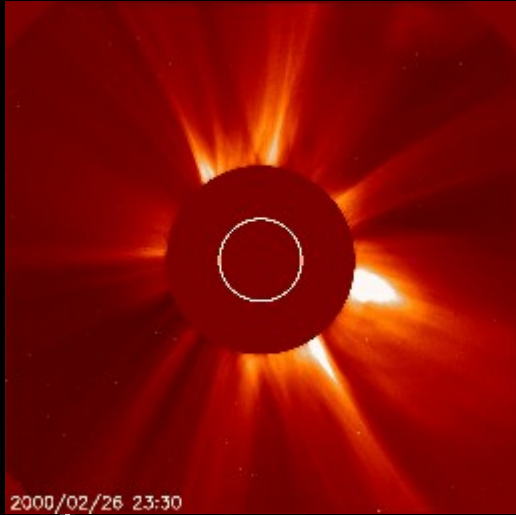
- ♦ Петна
- ♦ Протуберанс
- ♦ Корона
- ♦ Коронални примки
- ♦ Коронални избухвания



Approx. size of Earth →



Слънце



Слънцетресение

- 9 юли 1996

(1998 Nature)

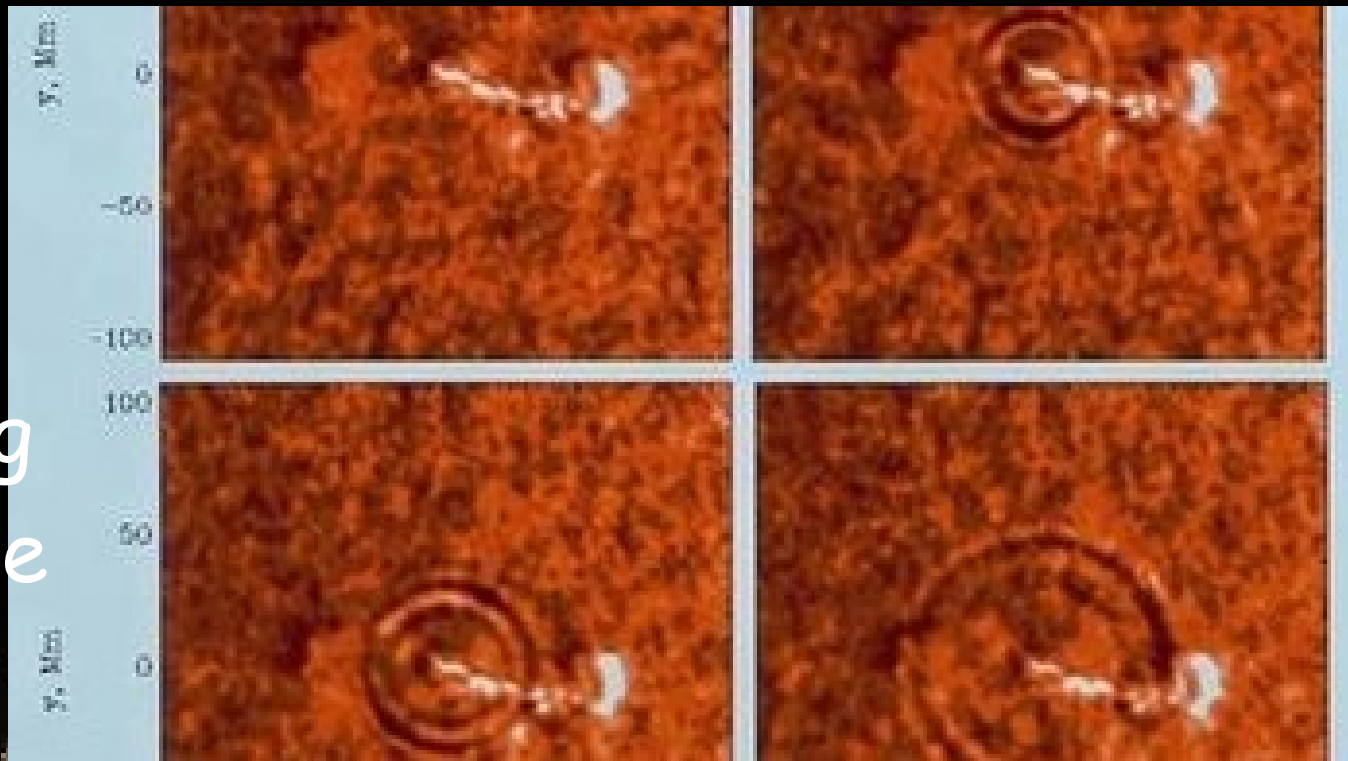
- 11.3 Richter mag

- за 1 час вълните
са пропътували

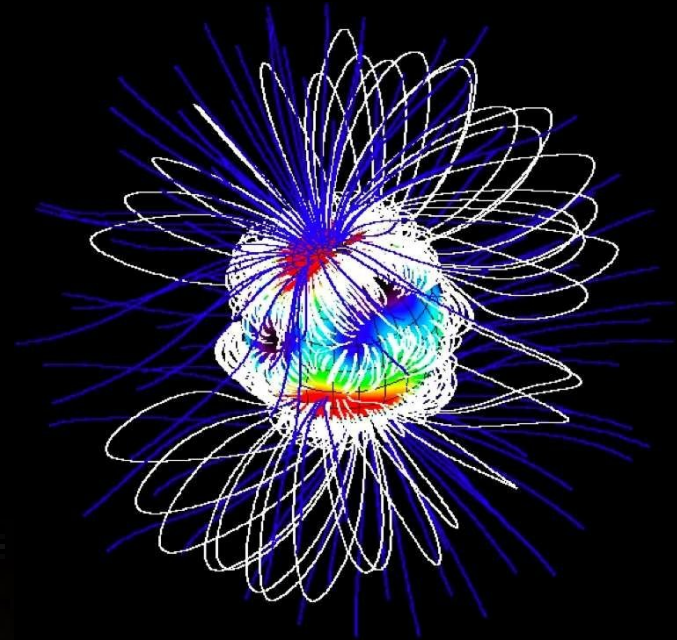
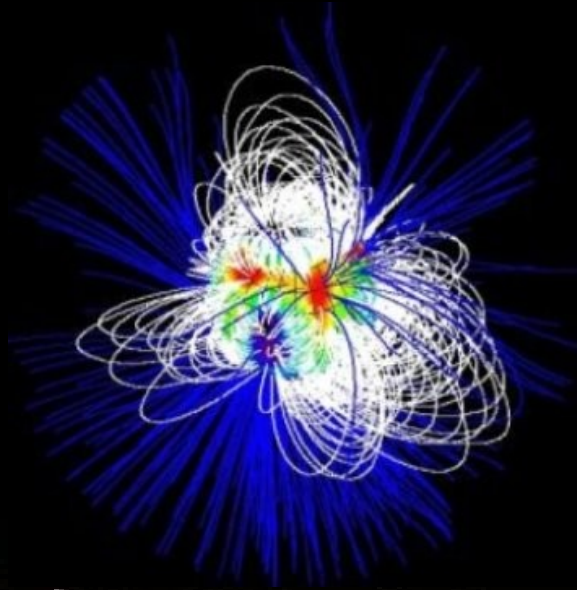
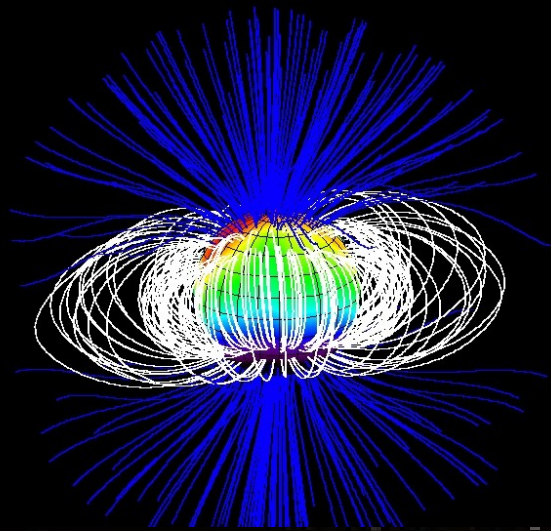
разстояние от 10 земни диаметъра

- скорост 35 000 км/ч до 40 000 км/ч

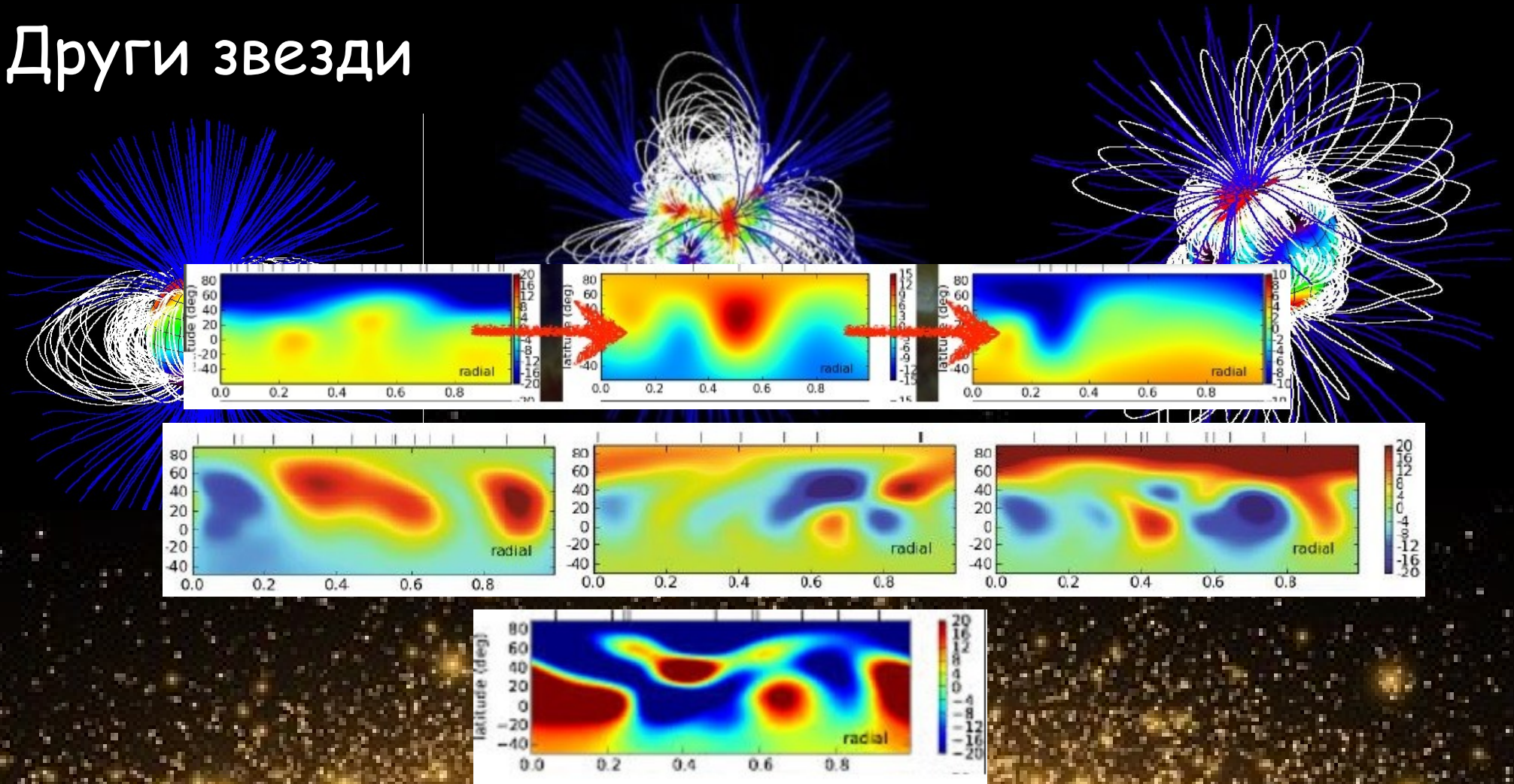
- височина на сеизмичната вълна - 3 км



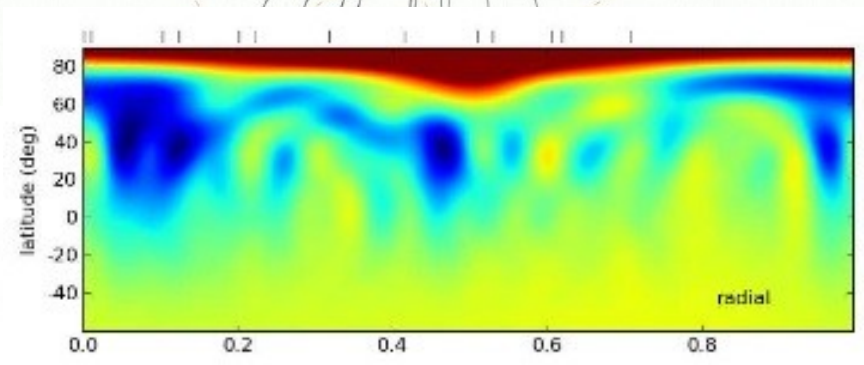
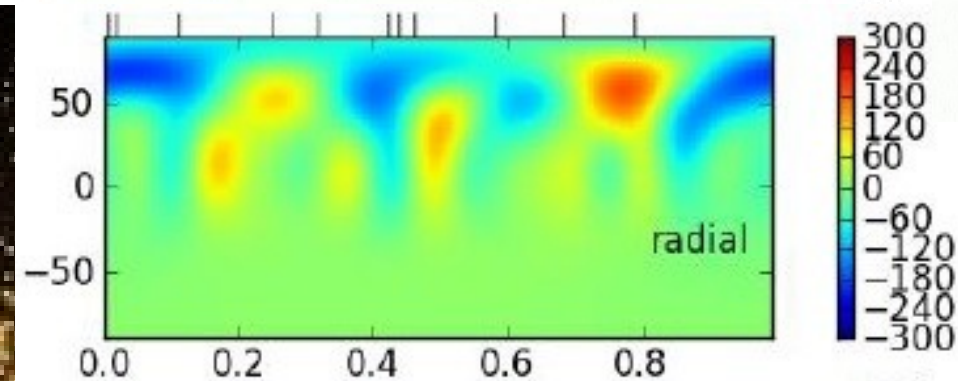
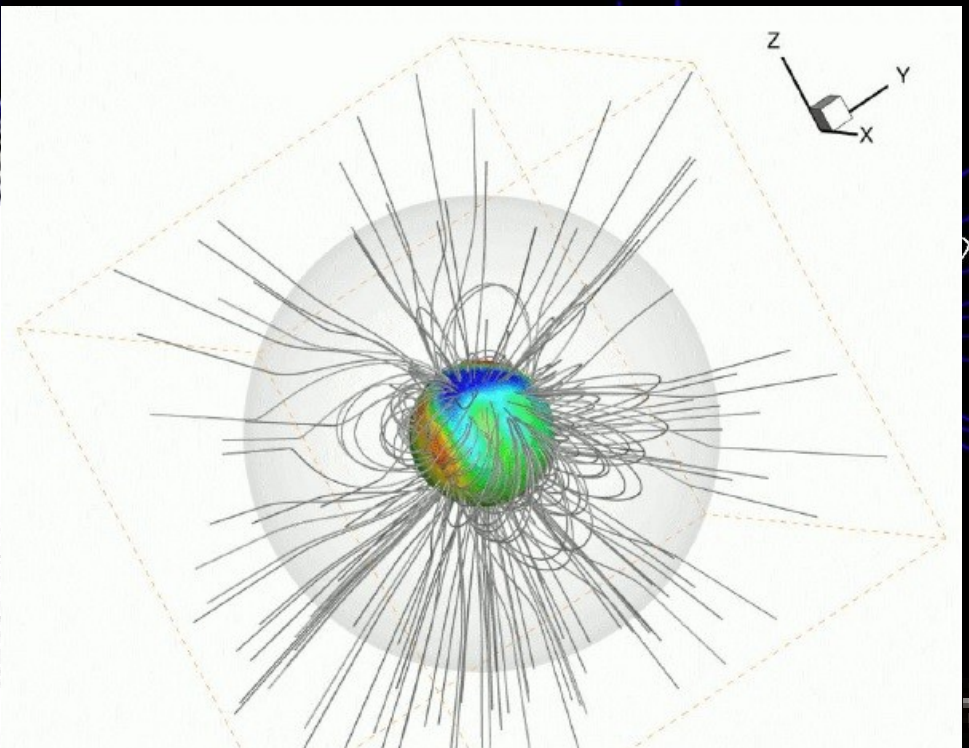
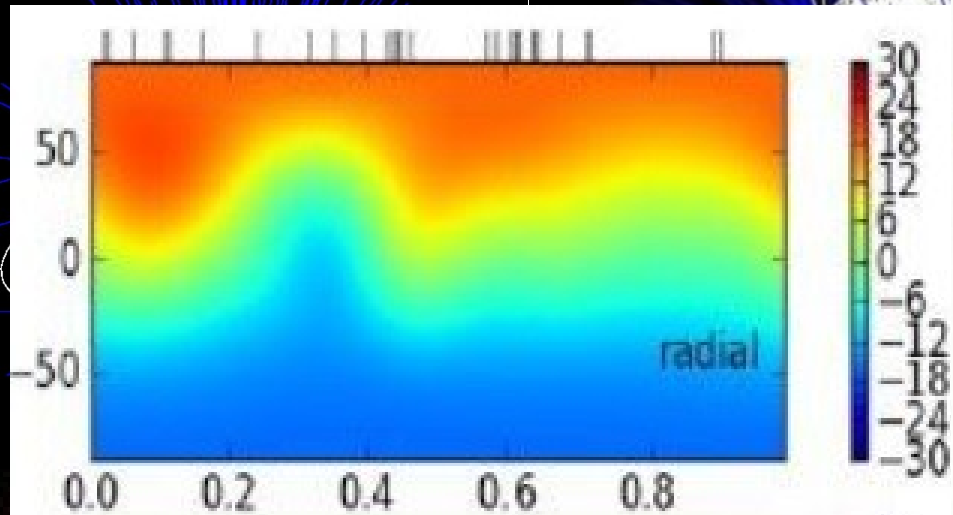
Други звезде



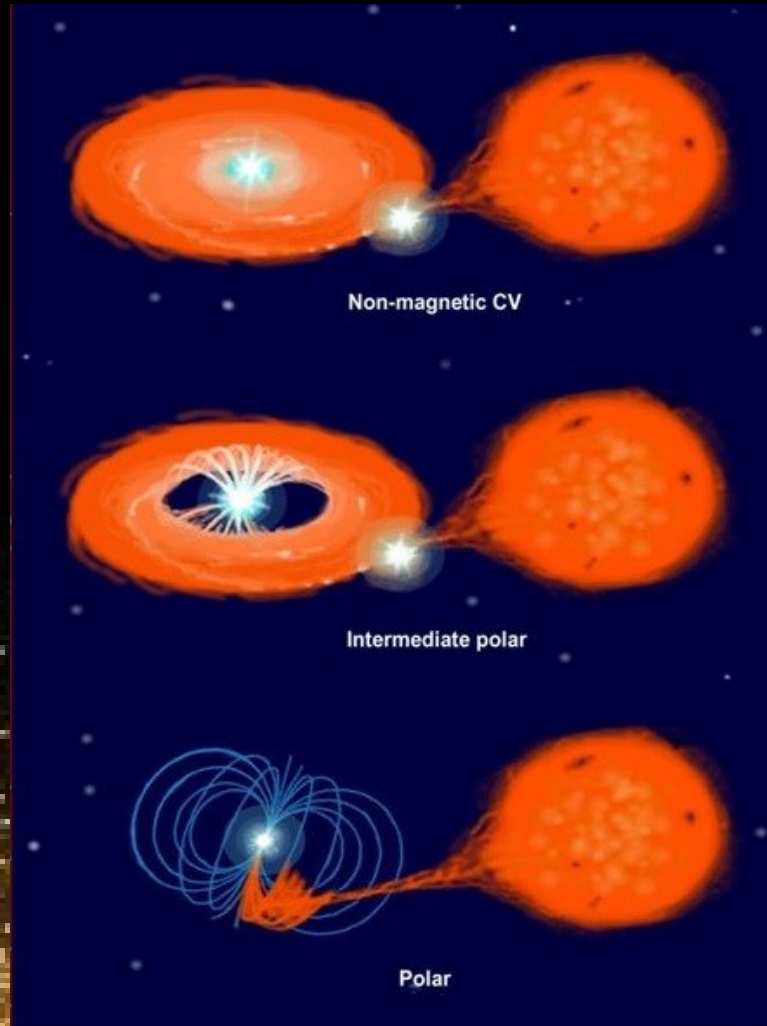
Други звезде



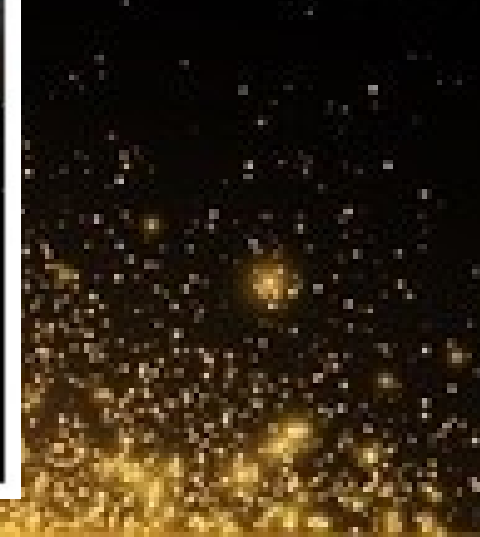
Други звезде



Други звезде

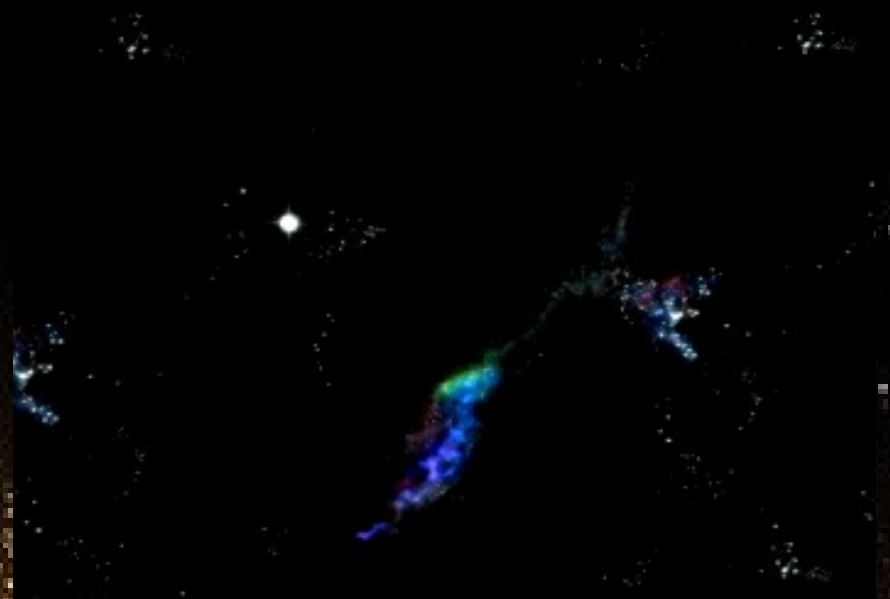


Северно сияние



Magnetar SGR 1806-20

- starquake
- 50 000 ly (5×10^{17} km)
- $D = 20$ km
- $P_{\text{rot}} = 7.5$ sec
- $B = 10^{15}$ G
- 27 Декември 2004
- 10^{40} watts



Сияние на кафяво джудже LSR J1835+3259

$P_{\text{rot}} = 2.84 \text{ h}$
18 ly

nature > letters > article

MENU ▾

nature
International journal of science

Letter | Published: 30 July 2015

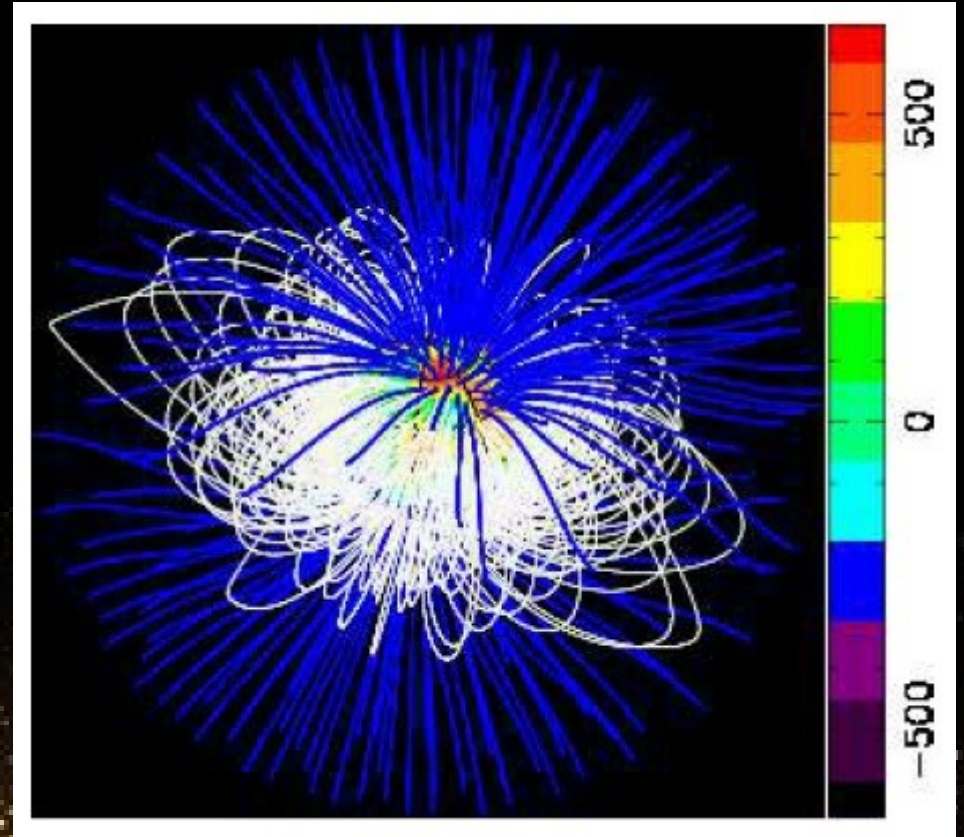
Magnetospherically driven optical and radio aurorae at the end of the stellar main sequence

G. Hallinan , S. P. Littlefair, G. Cotter, S. Bourke, L. K. Harding, J. S. Pineda, R. P. Butler, A. Golden, G. Basri, J. G. Doyle, M. M. Kao, S. V. Berdyugina, A. Kuznetsov, M. P. Rupen & A. Antonova

Nature **523**, 568–571 (30 July 2015) | [Download Citation](#) 

V830 Tau

- Nature 2016
- $M = 1 M_{\text{sun}}$, $R = 2 R_{\text{sun}}$
- $P = 2.7 \text{ d}$
- 2 Myr
- $M_p = 0.77 M_j$



Благодаря за Вашето внимание!