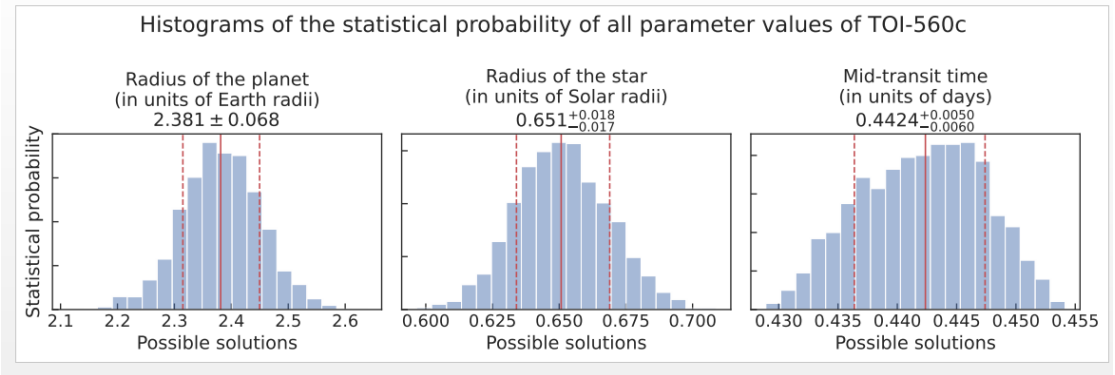
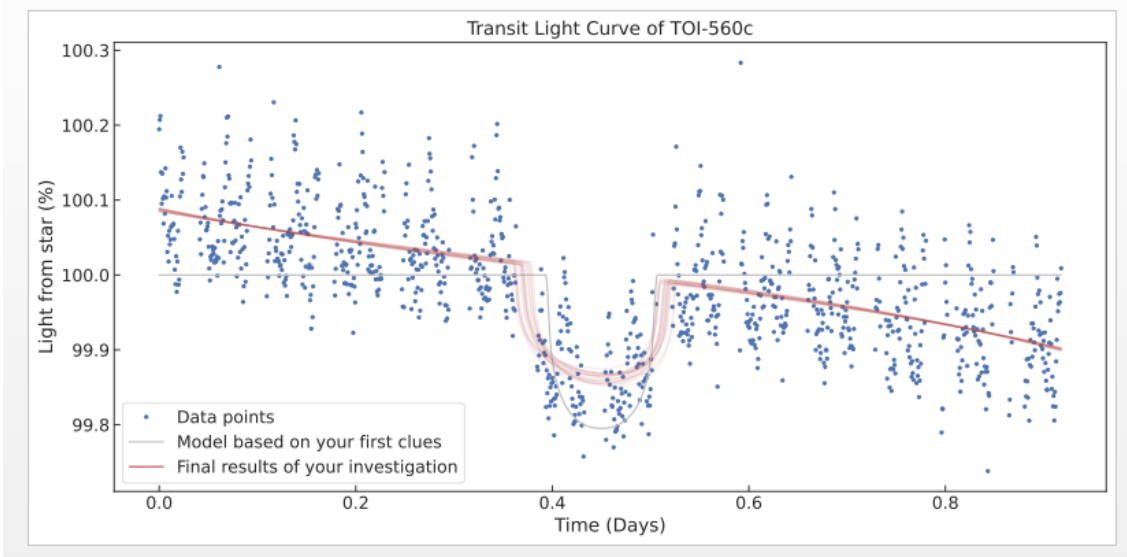


TOI-560c

1. DATA ACCESS



| Light curve | | Histograms | | Table | | |
|--|--------------|-------------|-------------|-------------------------------------|----------|--|
| Name | Median value | Lower error | Upper error | Case note | Target | |
| Radius of the planet (in units of Earth radii) | 2.381 | 0.066 | 0.068 | Cheops observations | TOI-560c | |
| Radius of the star (in units of Solar radii) | 0.651 | 0.017 | 0.018 | Cheops observations | TOI-560c | |
| Mid-transit time (in units of days) | 0.4424 | 0.0060 | 0.0050 | Cheops observations | TOI-560c | |
| Orbital period (in units of days) | 18.3797 | | | Other observations from the archive | TOI-560c | |
| Orbital semi-major axis (in units of AU) | 0.1242 | | | Other observations from the archive | TOI-560c | |

SIZE OF THE EXOPLANET

Together with the data collected, we realize how small TOI-560c is.

La Fuerza del Desarrollo

Paso 2 (Recardar a los datos) TOI-560c

Transit depth = 8,9%

$R_s = 0,65$

$$R_p = \sqrt{R_s^2 \times \frac{\text{transit depth}}{100}}$$
$$= \sqrt{(0,65)^2 \times \frac{0,089}{100}}$$
$$= 0,02 R_{\text{sun}}$$
$$R_p = 0,02 \times 109 = 2,18 R_{\text{earth}}$$

ORBITAL PERIOD AND DISTANCE

The orbital period is 18.8797 days shorter than that of the Earth, while its distance is far and yet close to the star.

$G = 6,67430 \times 10^{-11} \text{ m}^3 \text{ kg}^{-1} \text{ s}^{-2}$

$M_b = 0,73 M_{\text{sun}} = 1,9884 \times 10^{30}$

$M_{\text{sun}} = 1,45 \times 10^{30} \text{ kg}$

$T = 18,8797 \text{ d.} \times 86400 \text{ s} = 1631206,08 \text{ s}$

$$d = \sqrt[3]{\frac{GM T^2}{4\pi^2}} = \sqrt[3]{d = 1,87 \times 10^{10} \text{ m.}} \begin{matrix} 1 \text{ km} \\ 1000 \text{ m} \end{matrix}$$
$$= 18700000 \text{ km.} \begin{matrix} 1 \text{ AU} \\ 149597870,7 \end{matrix}$$

$d = 0,12 \text{ AU}$

TEMPERATURE AND HABITABILITY

The temperature is about $225 \pm 15 \text{ }^\circ\text{C}$, the temperature is higher than that of the Earth, so it is not a habitable place, some of the living beings would not be able to withstand the conditions.

COMPOSITION

The density of the planet is higher, almost equal to that of the planet earth, in my opinion it can present the same characteristics of a rocky planet.

Handwritten calculations on grid paper:

$$V = \frac{4}{3} \pi R^3$$
$$M_p = 9.30 M_{\text{Earth}} \cdot \frac{5.9722 \times 10^{24}}{M_{\text{E}}} = 5.79 \times 10^{29} \text{ g}$$
$$R_p = 2.18 R_{\text{E}} = 6378 \text{ km} = 13904.04 \text{ km} \cdot \frac{100000}{1 \text{ km}}$$
$$R = 1.39 \times 10^9 \text{ cm}$$
$$V = \frac{4}{3} \cdot 3.1418 \cdot (1.39 \times 10^9)^3$$
$$V = 1.12 \times 10^{28} \frac{\text{kg}}{\text{km}^3}$$
$$\frac{M}{V} = \frac{5.79 \times 10^{29}}{1.12 \times 10^{28}}$$
$$\rho = 5.16 \times 10^{-3} \cdot \frac{1000 \text{ g}}{1 \text{ kg}}$$
$$\rho = 5.16 \text{ g}$$