

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

zhenggq51 Planet 2

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We have identified what may be an indication of extraterrestrial intelligence, as well as the planet where it may have originated. This document summarizes the information gathered so far about the candidate message and its candidate planet of origin.

Potential evidence for extraterrestrial intelligence

Astronomers have detected a broadband microwave transmission that appears to have originated from this planet's solar system. The transmission is believed to contain an image and is displayed below with the most likely aspect ratio. The transmission lasted a short duration and then stopped. The transmission is shown below:

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1010011110011100001110011111101110100001110000000011010
01101101001011110101110010100000010101000111111010000000
01100010101101101001111101011110111101000110000101101001
0101101011011111111100011110001010010111100110010000100
1010110000011101001001111001111101001000011100111010110
00100001111101110110100101101010111011000101001111011101
01101100100110011111100001100100110010110110011110001111
10010110111010100110000011011011101101011111101100100111
01000111111001110100000101010001111010000100101001001011
```

This signal was first noticed at UTC 2095-08-07/13:30.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.296
Stellar Mass (Solar Masses)	0.737
Distance to Star (lightyears)	729.2
Planet Mass (Earth masses)	0.9
Atmospheric Pressure (atm)	12.8

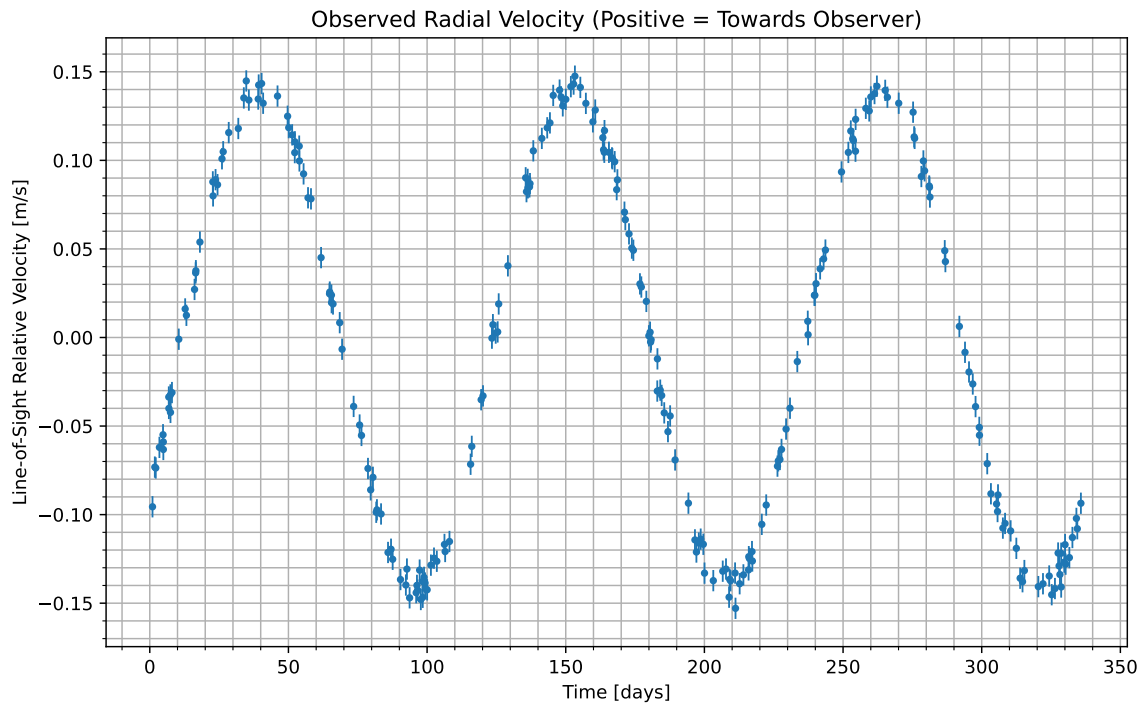


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2095-08-08/07:04. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	29.7
CO_2	63.8
H_2O	6.44

Gas Abundance (percent by volume)

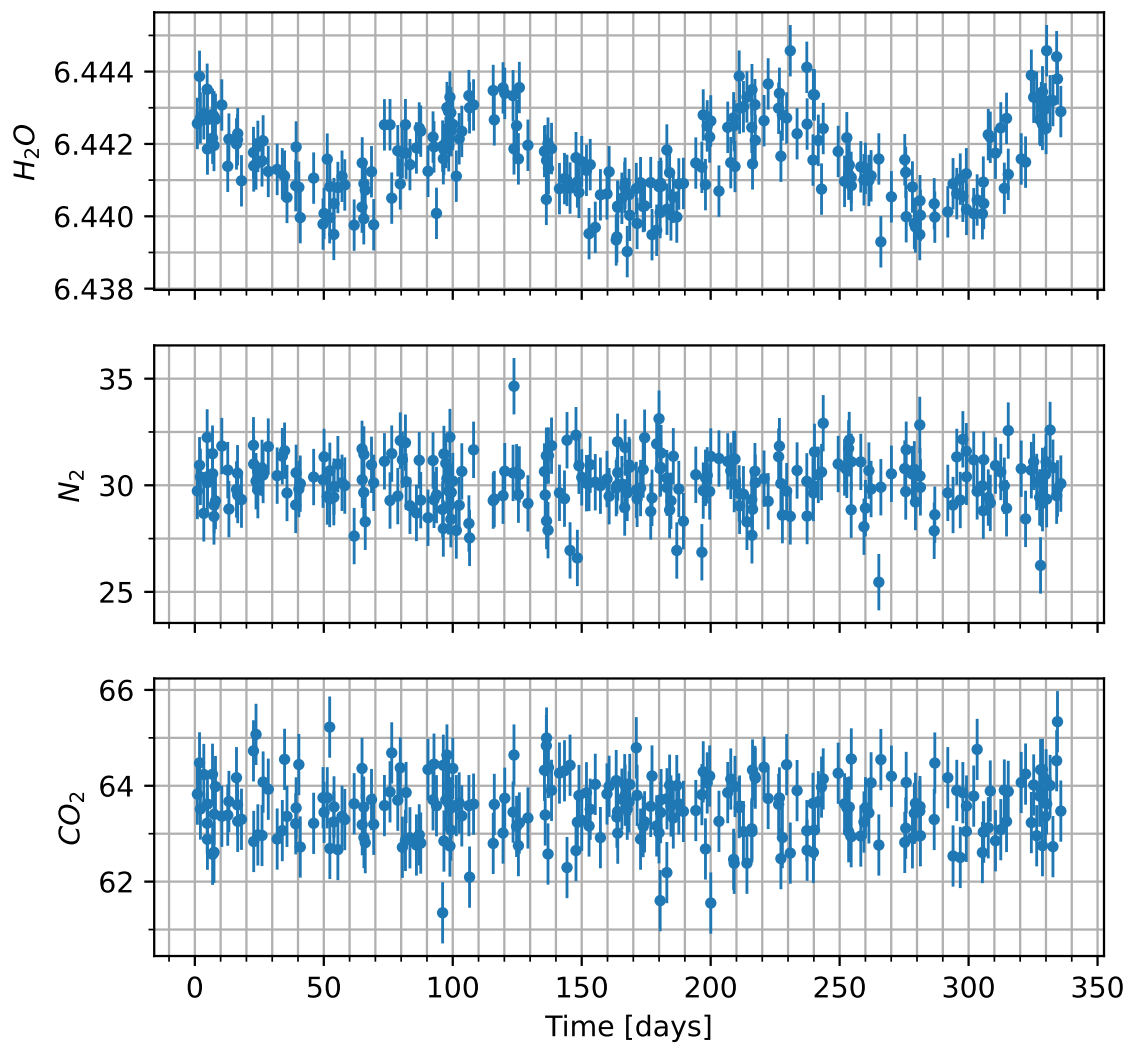


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

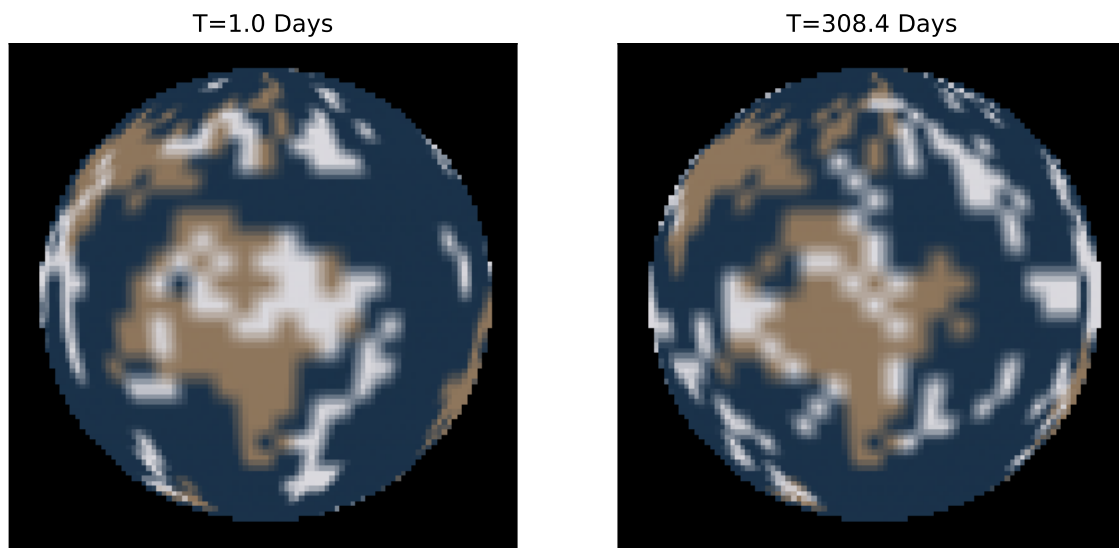


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.