

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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Planet 3

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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 is continuous and does not repeat itself frequently. An excerpt of the transmission is shown below:

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0111000000101010000101100111110001001000010010001010110101011100010  
111111010000001000001010001001110101101011110101110000011011000000  
1101011001001000101101010000010100101101011111001100110001000101010  
0110100010100100011010001000101011110001011110001101010000100100101  
1001100010011010011101110110111000100010100000110011100011101100011  
1101101001111100001001000100100011100010111100010000001101110001000  
010010011000000100110001101001001001010011101110111011110110001000
```

This signal was first noticed at UTC 2088-08-18/22:30.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.0349
Stellar Mass (Solar Masses)	0.432
Distance to Star (lightyears)	223.0
Planet Mass (Earth masses)	1.8
Atmospheric Pressure (atm)	5.0

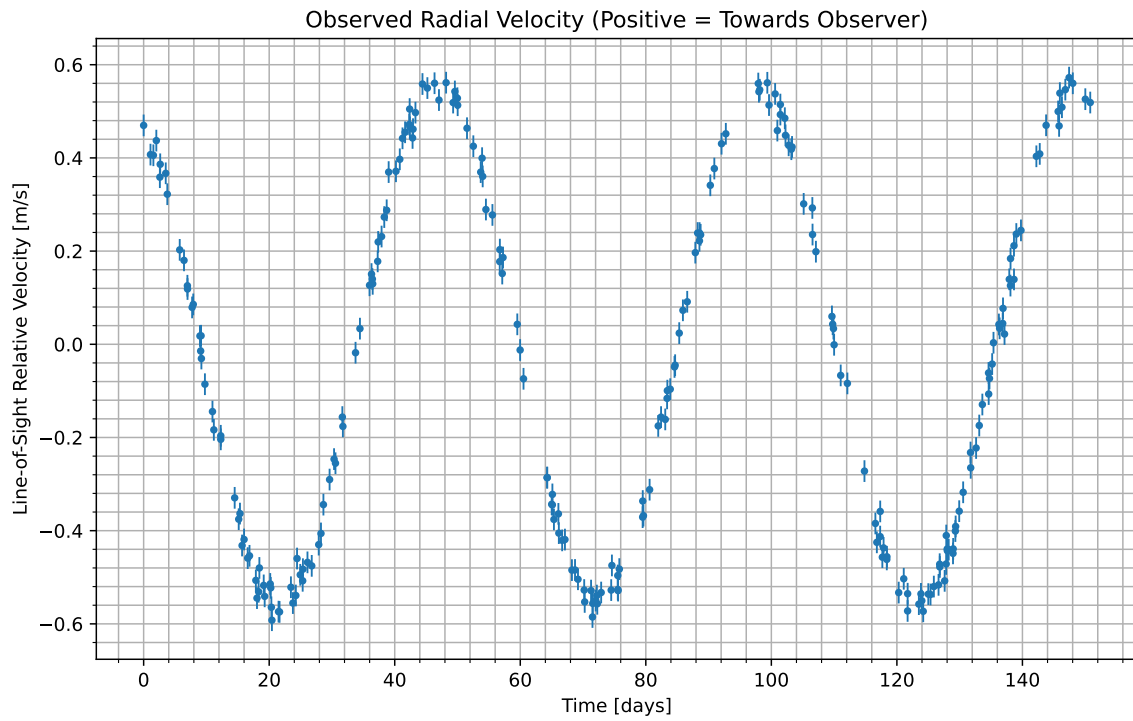


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2088-08-19/20:23. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	9.68
CO_2	58.7
H_2O	31.6

Gas Abundance (percent by volume)

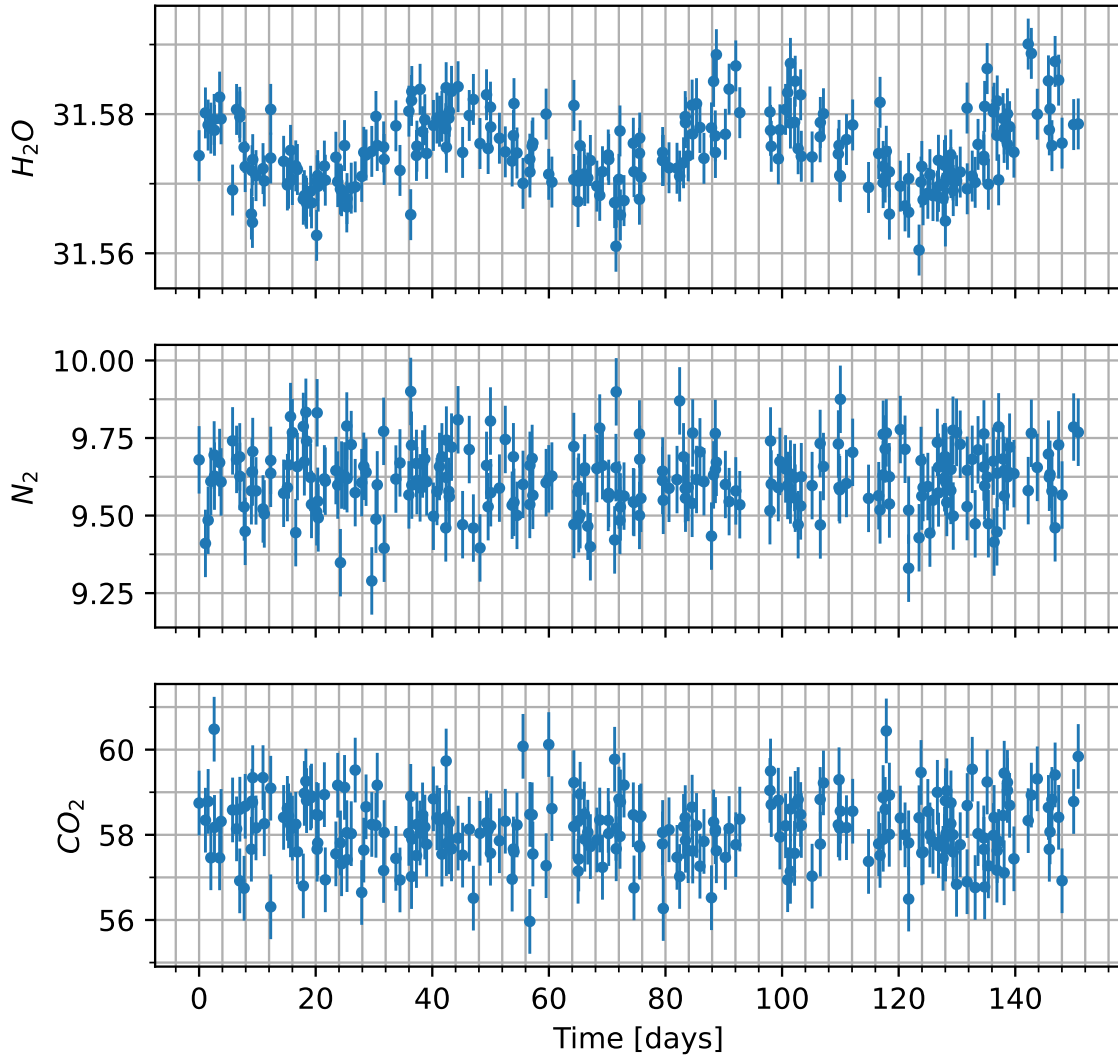


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

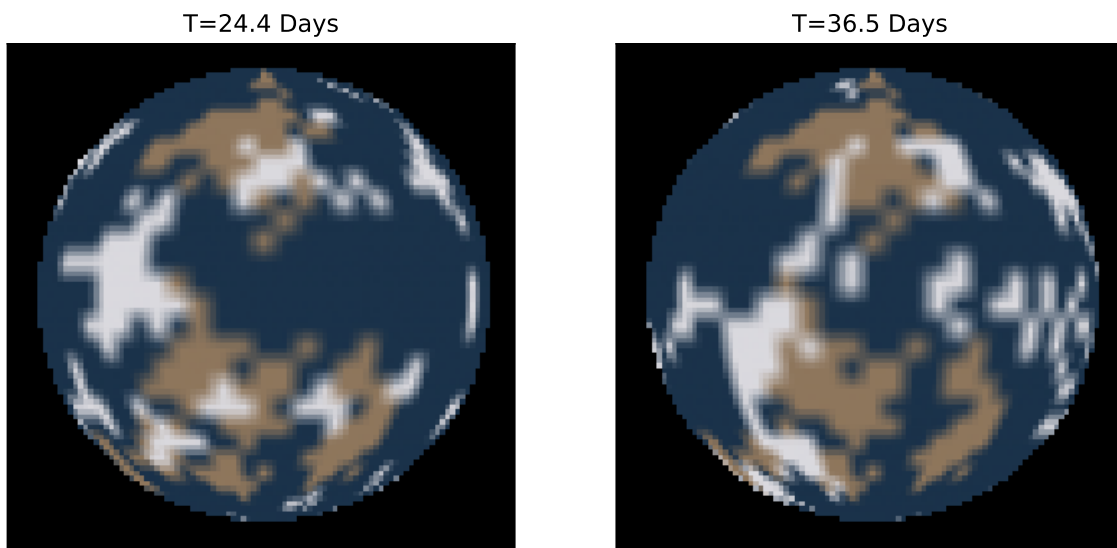


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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