

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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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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1111010001100010001001001101110111111100110011010001110011001101010010011110  
0111111010101001100011100001010100111110000010111100111101011101100011001000  
010101110111011110100000100110011101001101110110011001011100100101111100000  
1001010011101010000110111110111001101001010000101011100111110101010011000111  
0111001010101001001100011101100001100111100110010100000011001001010001000101  
111100101010101000101001001101111011101111011000011010011001001000001010011
```

This signal was first noticed at UTC 2089-07-09/16:29.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.238
Stellar Mass (Solar Masses)	0.698
Distance to Star (lightyears)	361.9
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	0.8

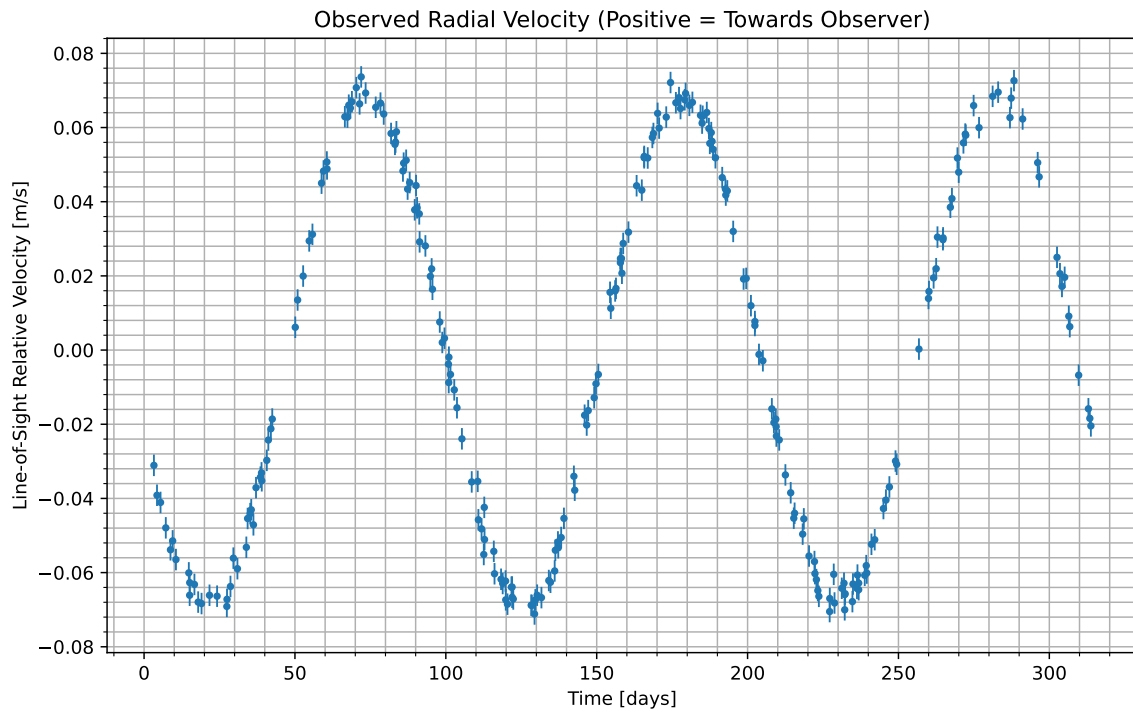


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2089-07-12/02:37. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	41.9
CO_2	23.9
H_2O	34.2

Gas Abundance (percent by volume)

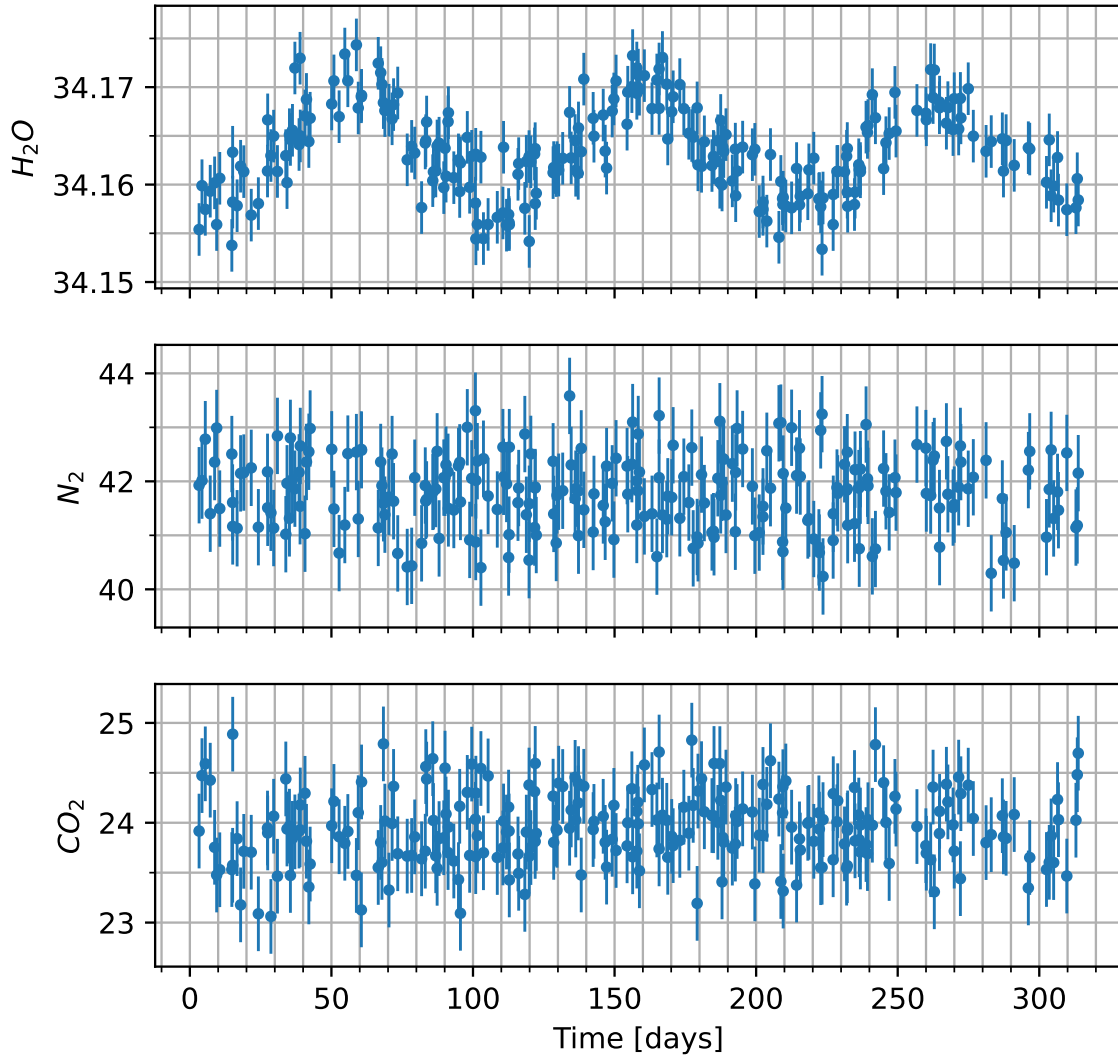
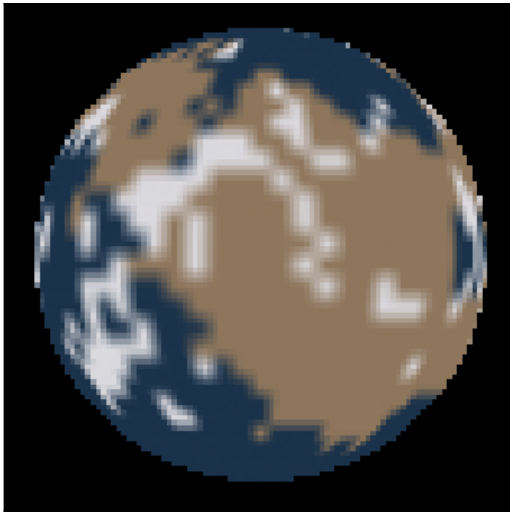


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

T=142.4 Days



T=170.2 Days

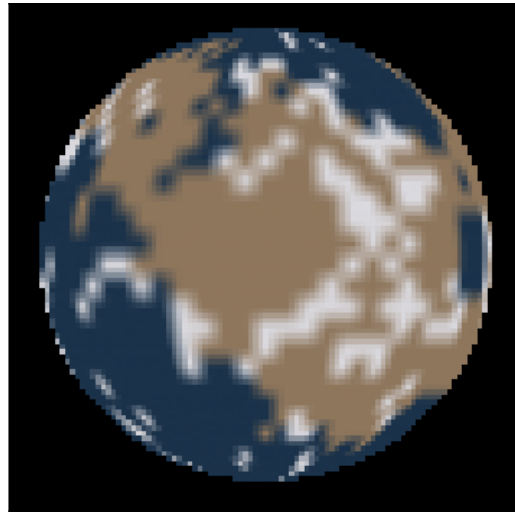


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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