

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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1011110001100110100011111001010111000001111011010000111010010110101
100001100110001011011011100111111101011101011000111100011001101000
000011110010111010000100011100100111111011111100000101011110101100
001011100011101011010110001010111111011110001000001111010101001111
000111100110010011000110101101011011101110111110110110001111010101
1011010010000111111100010111001000110010011000010100100101110001011
```

This signal was first noticed at UTC 2096-05-31/06:07.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.0514
Stellar Mass (Solar Masses)	0.476
Distance to Star (lightyears)	112.3
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	11.9

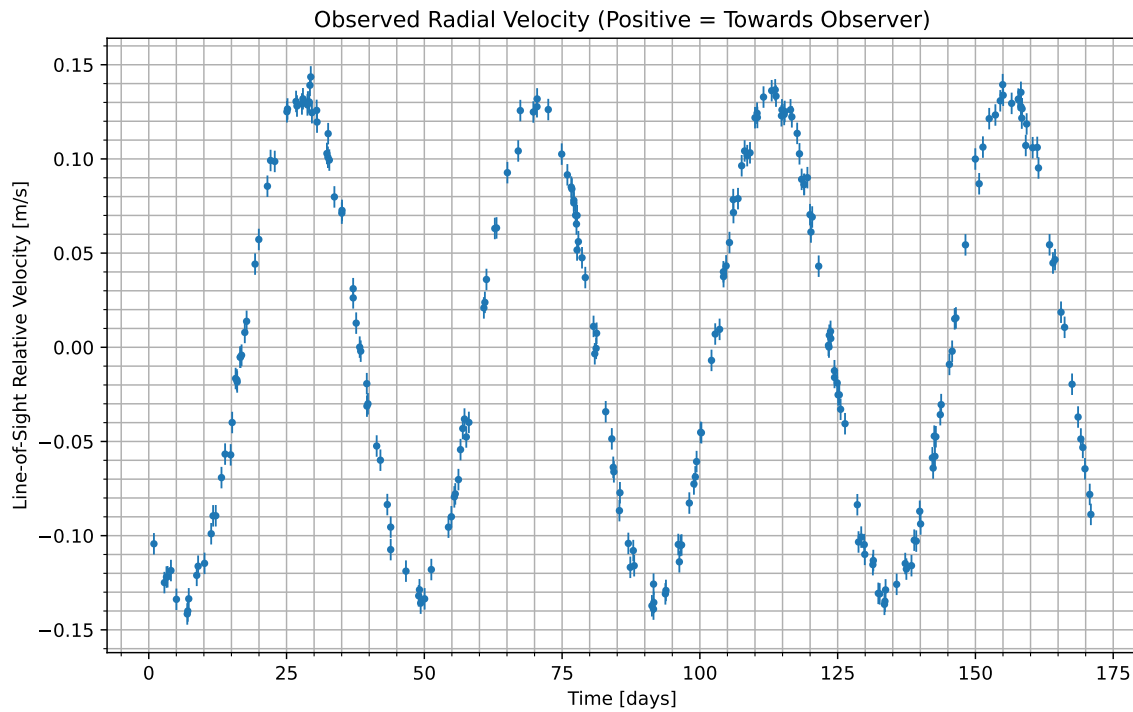


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2096-06-03/05:57. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	15.4
CO_2	65.9
H_2O	18.7

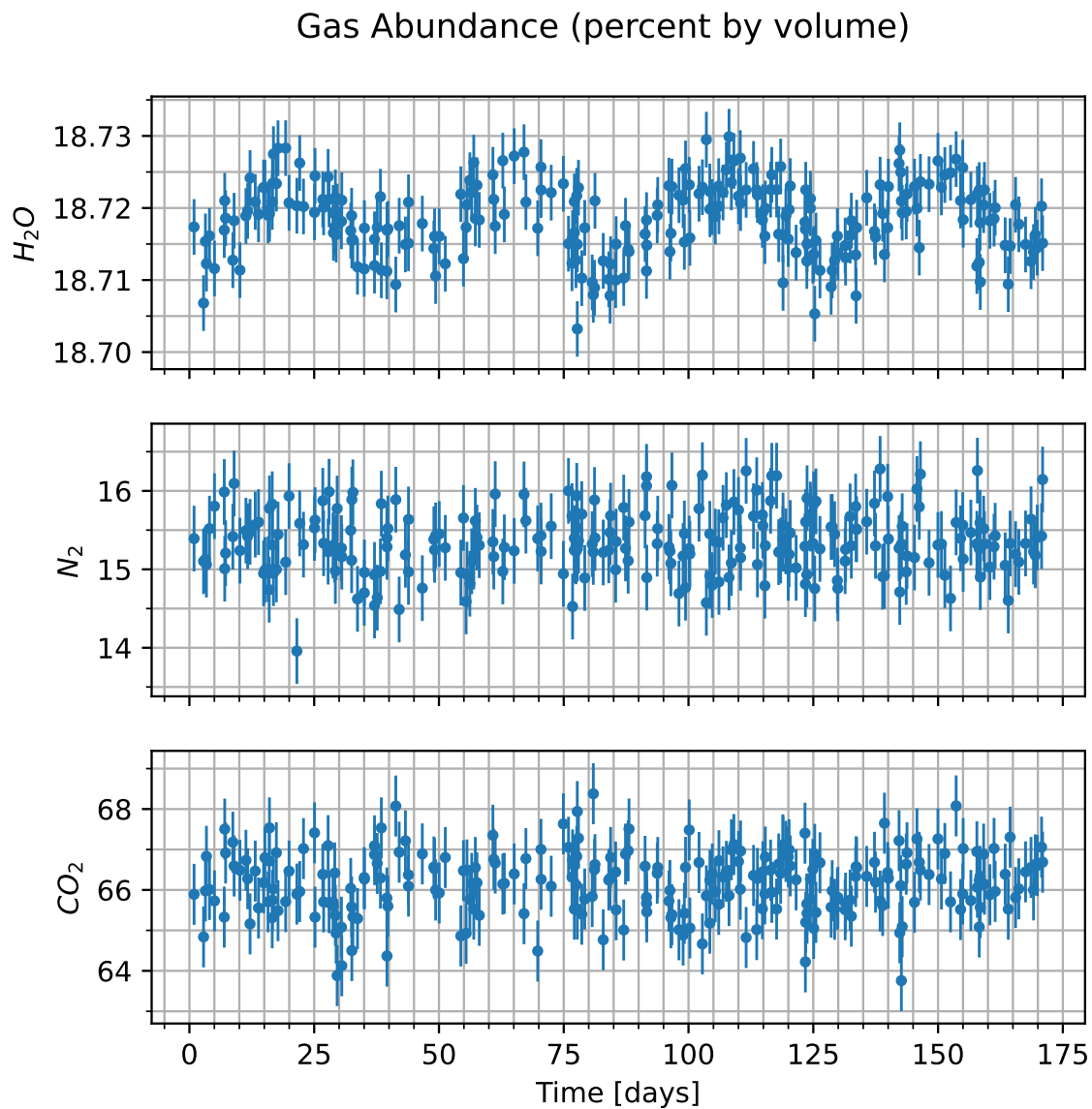


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

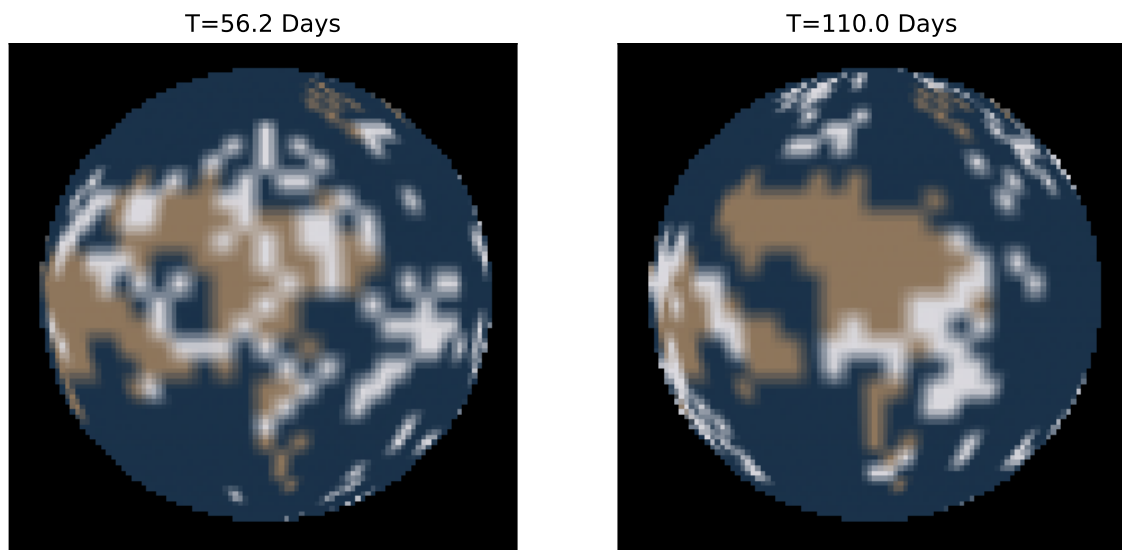


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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