

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

behnami2

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 radio 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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11010010010011100101111010011000101111011011101110001100000001101100101111001
01110101001100000101100011011101110110000100111010110010100000011010110110010
1100010111010001110000011010010011110110011001010001110101111110000111010000
00110011110111011111001000111111100000001011100110111010011111011001111001
01101101111000011111001100100100110100001100001001100100111111000111101011101
0100100010100101000111111001111001110101001110111011000111001111111000111010
10000100010000101000111011101111000110100100010010011111000101001111110001110
00010010010001100001001010011000101010101000100110010100001100001000001101001
00011110000101010011010001001100110001111001011010001111010100110111000101000
```

This signal was first noticed at UTC 2082-05-31/04:59.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.156
Stellar Mass (Solar Masses)	0.629
Distance to Star (lightyears)	643.1
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	17.5

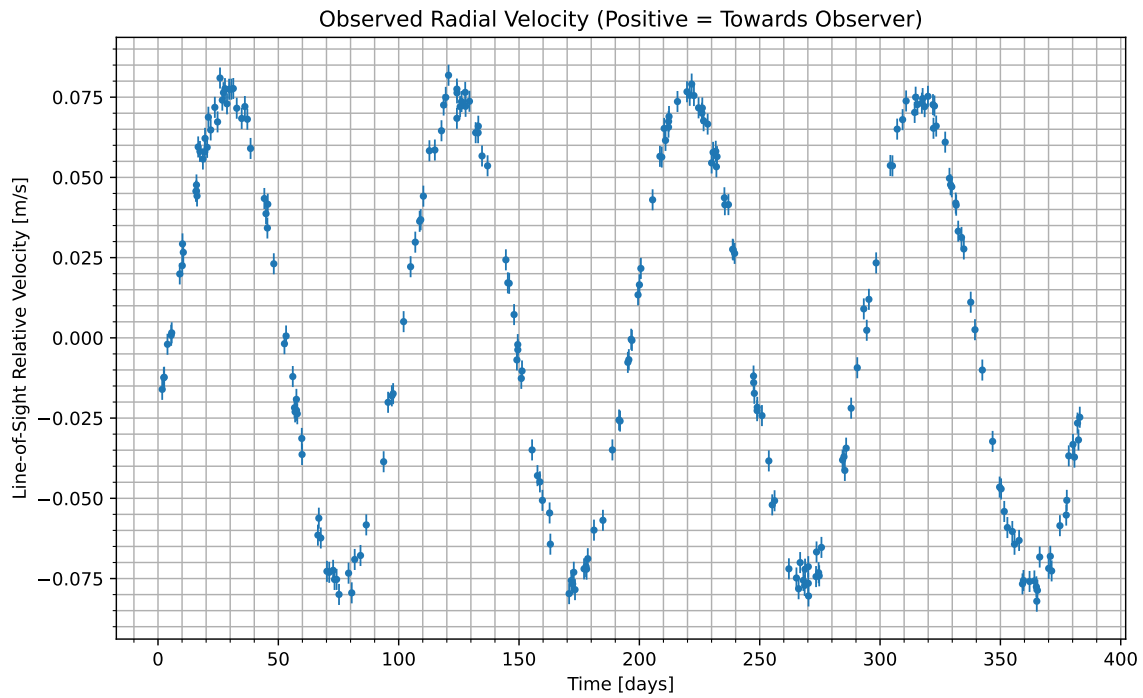


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2082-06-01/18:41. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	25.4
CO_2	49.5
H_2O	25

Gas Abundance (percent by volume)

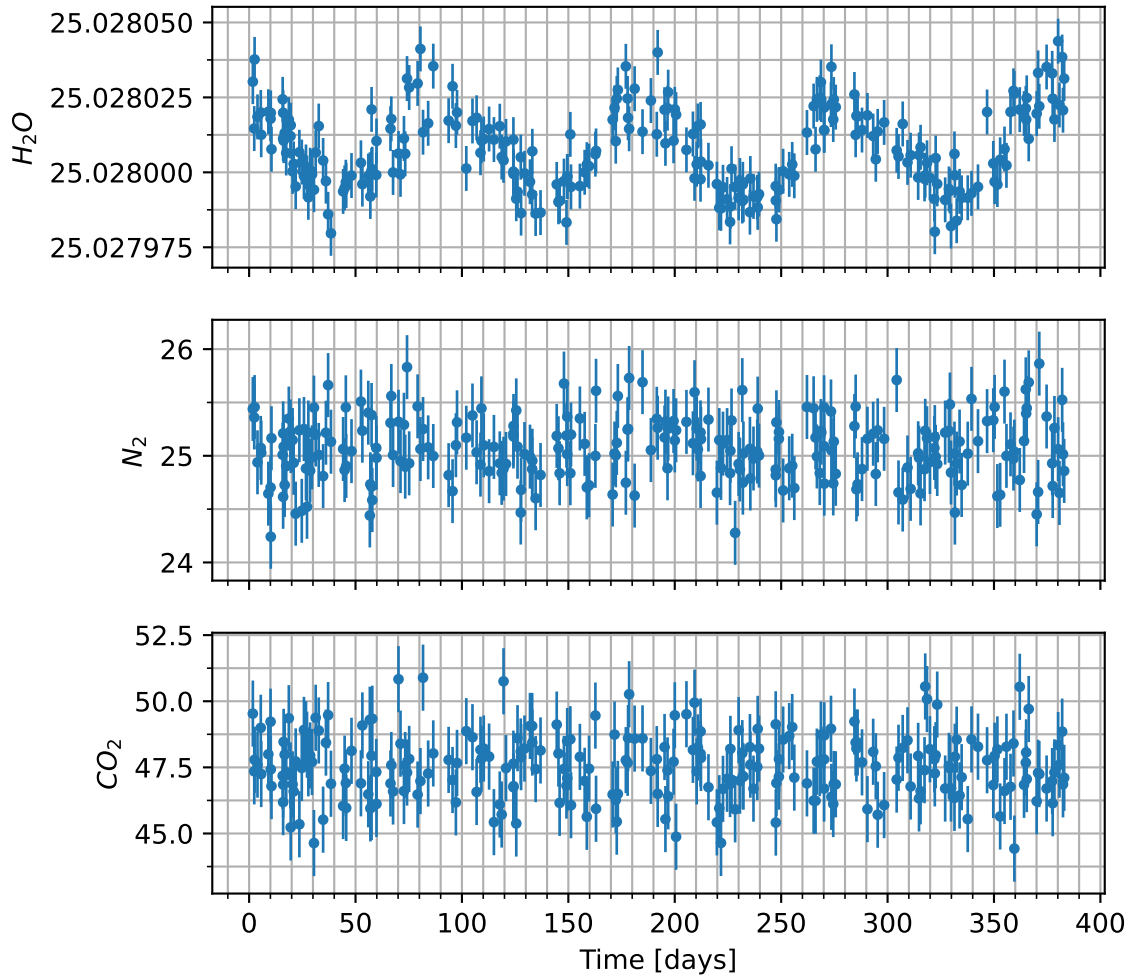
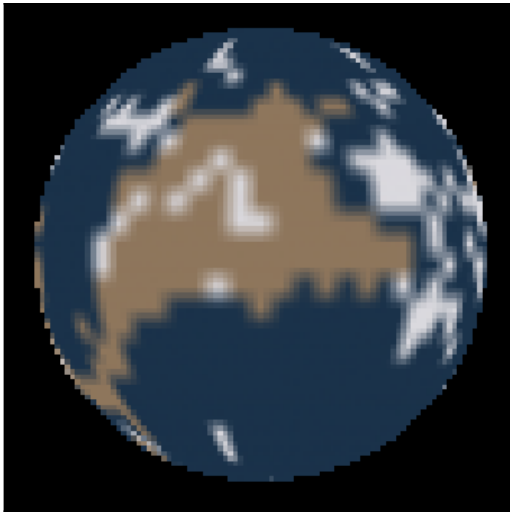


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

T=108.7 Days



T=132.0 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.