

# 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:

```
00010101010000000111011101111001000101000000001110110110
1101101100011111011100000100110010110110111111101001111
10000110101011100111110000101111000010100010100111100111
11010010110111110011101101111100111011000010111000000001
01111010011010111110100101000100010010011000101001111101
10001111000101111001000001011000101010000110000000011010
01111010011010010011110101111011111000001100111010111010
1110011010101000010010001011110011011111001000010110010
1001001011011001100110000001111100110100111100110110010
01110001010101101100000000001010001000010010100110110001
```

This signal was first noticed at UTC 2084-08-11/02:57.

### **Parameters of the candidate planet of origin and its host star**

Spectral Type	M
Stellar Luminosity (Solar Units)	0.00356
Stellar Mass (Solar Masses)	0.213
Distance to Star (lightyears)	693.6
Planet Mass (Earth masses)	0.9
Atmospheric Pressure (atm)	0.7

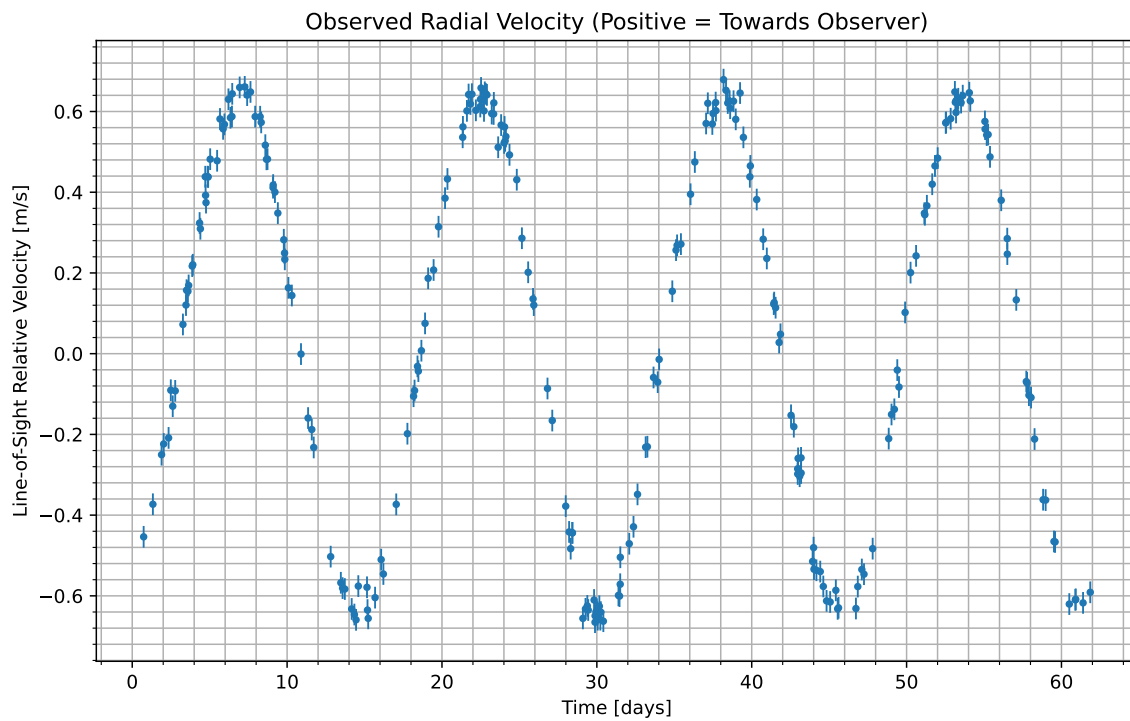


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2084-08-11/19:21. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

### Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
$N_2$	11.6
$CO_2$	71.3
$H_2O$	17.1

### Gas Abundance (percent by volume)

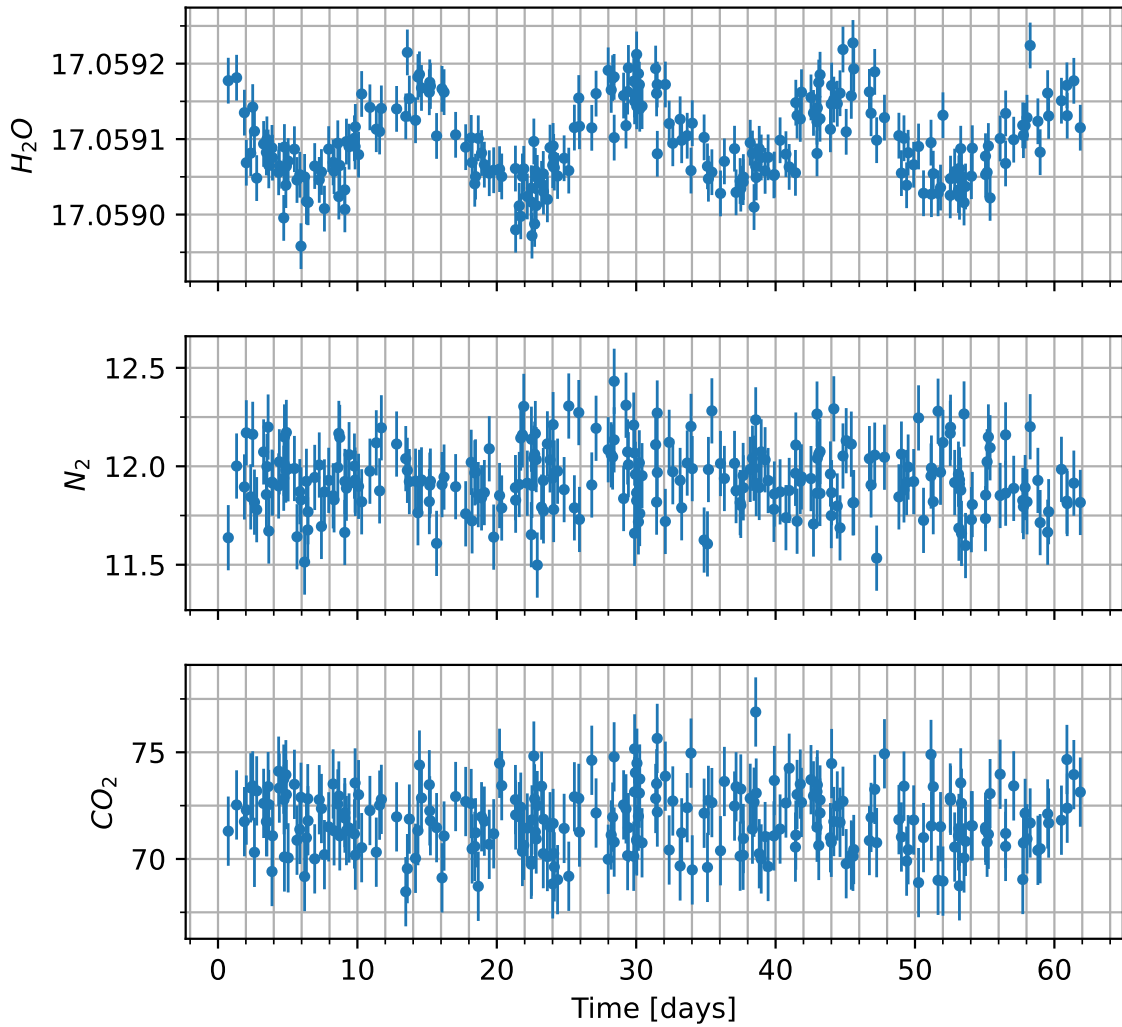


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

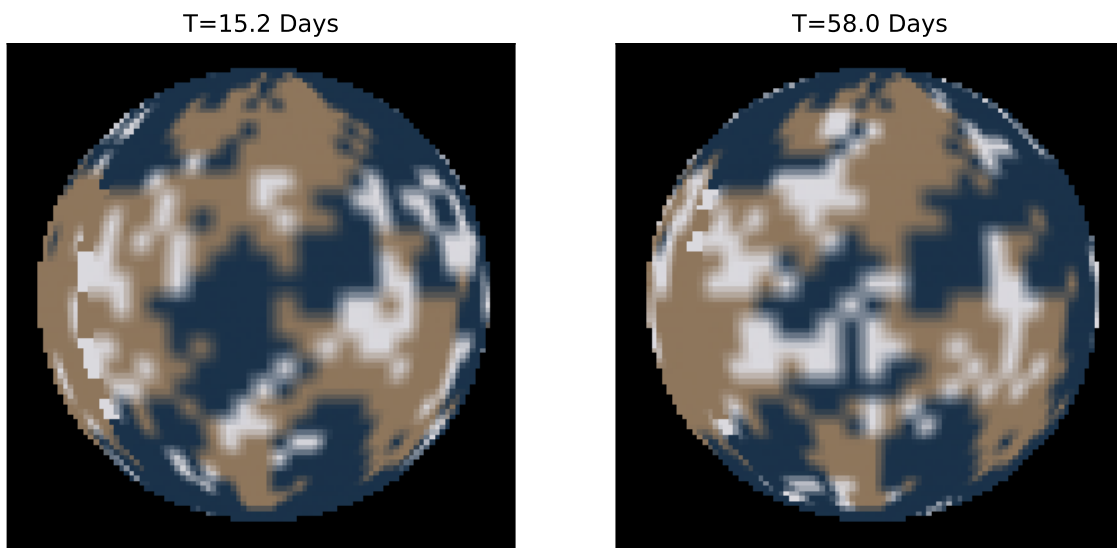


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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