

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

```
000010001101010110010000110111011111100100011010000011111100000111101010100
01101011101100101100100111100011111110000000101111110000101101100111001010
011100111011011100011111010101101011110100110001101000101011111100100110010
011011010010100001111011001001101011010000011100101011011010101001110100111
100101100001111111001111010011011110110111101110001010100111001010011001110
10010111110101011101100011010111011111100000001001000111001001111101010000
101011100101001011100100001110010100110011111110000001110110100001011101010
011010001101110000101111010110110111110101011000010100010101000110001100101
000101001101010000001111011100101100011011110111000010111100000110100100001
100001100000110100011101111000011010001111011110101001101111010101001000011
```

This signal was first noticed at UTC 2067-07-06/23:53.

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

Spectral Type	G
Stellar Luminosity (Solar Units)	0.986
Stellar Mass (Solar Masses)	0.996
Distance to Star (lightyears)	269.1
Planet Mass (Earth masses)	1.1
Atmospheric Pressure (atm)	14.5

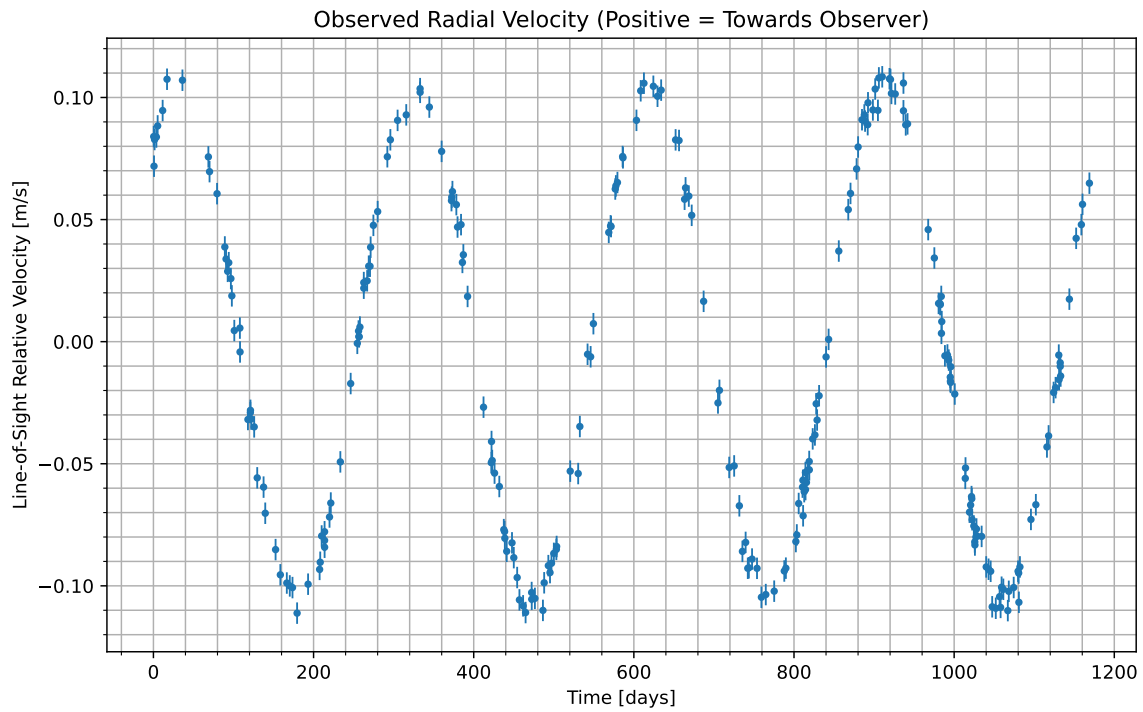


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2067-07-08/17:18. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	41.6
$CO_2$	42.9
$H_2O$	15.5

### Gas Abundance (percent by volume)

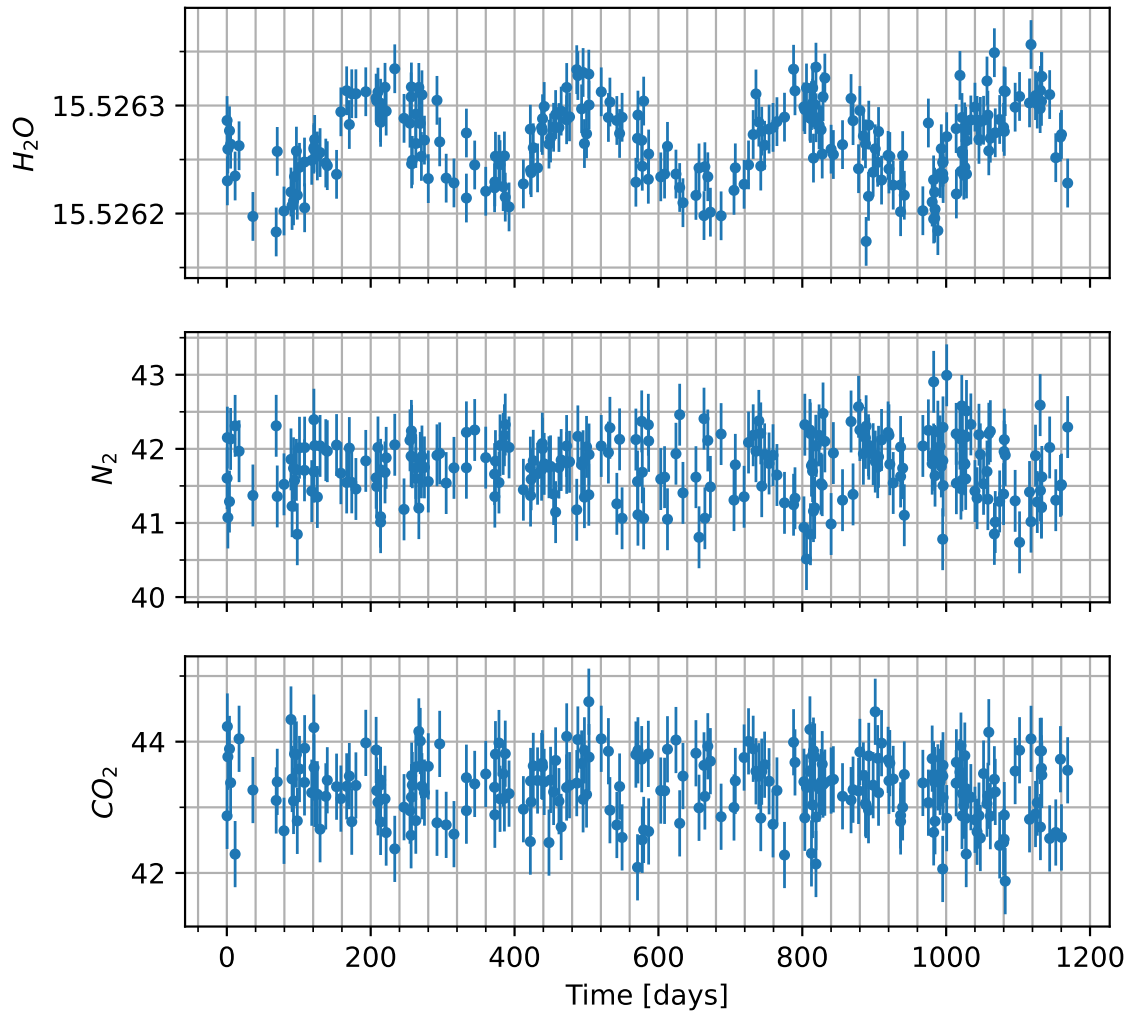


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

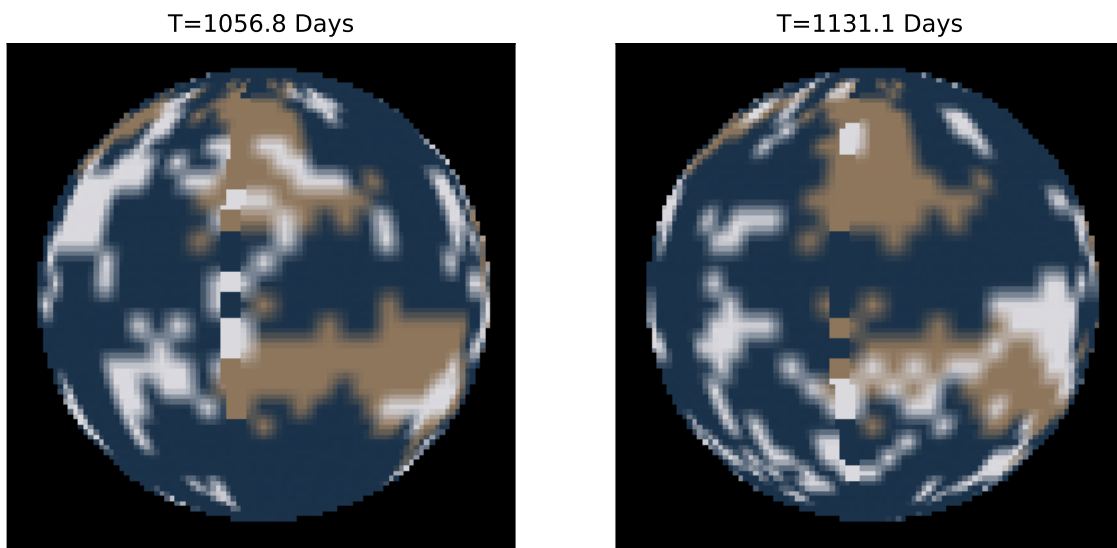


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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