

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

mehtaja7  
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:

```
0111010110101001011100000000100110111001011001101111010011
0001011111101101111000111010010110110010101011101000000111
0100010111110011100010100111110001010111010000101011010001
0011110111001110000101100110100001001000110001101111011011
1110010000111000001110010101101100011000011001011100111011
1001111101000001010001110010011100100000101100101011110001
1111010001010110100110010000101000010000010010111101100110
0011000110111100000000110101100000111110110001010110100000
0010010011100010000100010010110101111011011000011101010010
```

This signal was first noticed at UTC 2094-11-02/11:40.

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

Spectral Type	M
Stellar Luminosity (Solar Units)	0.00653
Stellar Mass (Solar Masses)	0.257
Distance to Star (lightyears)	948.1
Planet Mass (Earth masses)	1.3
Atmospheric Pressure (atm)	0.9

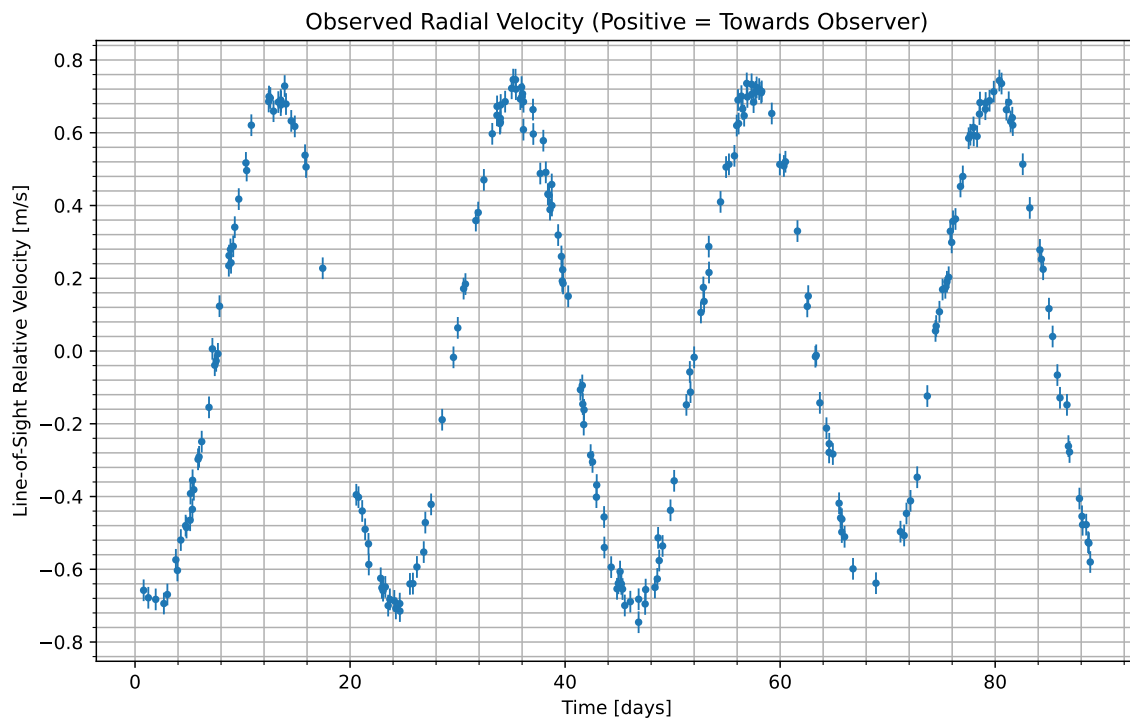


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2094-11-03/18:42. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	14.1
$CO_2$	59.3
$H_2O$	26.6

### Gas Abundance (percent by volume)

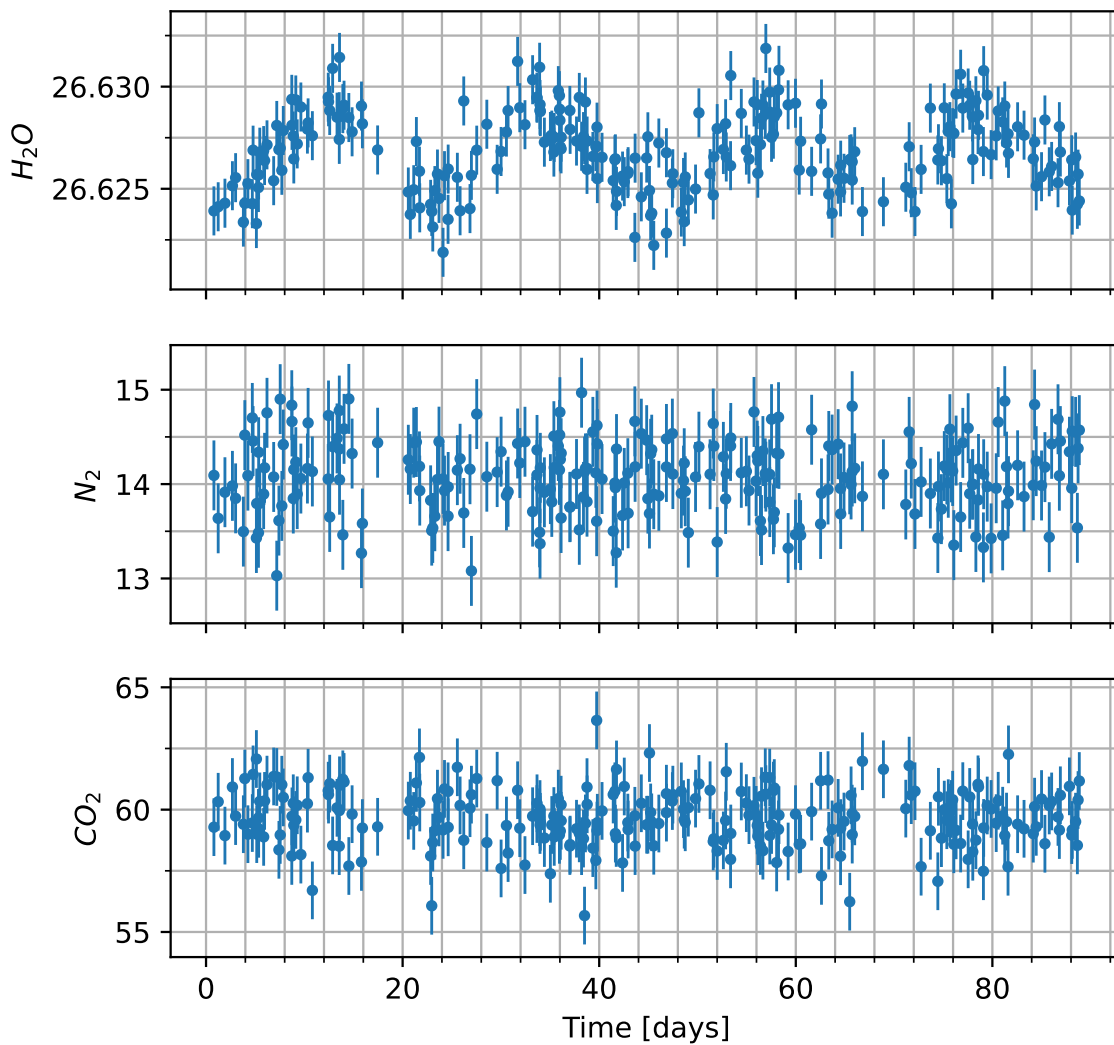


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

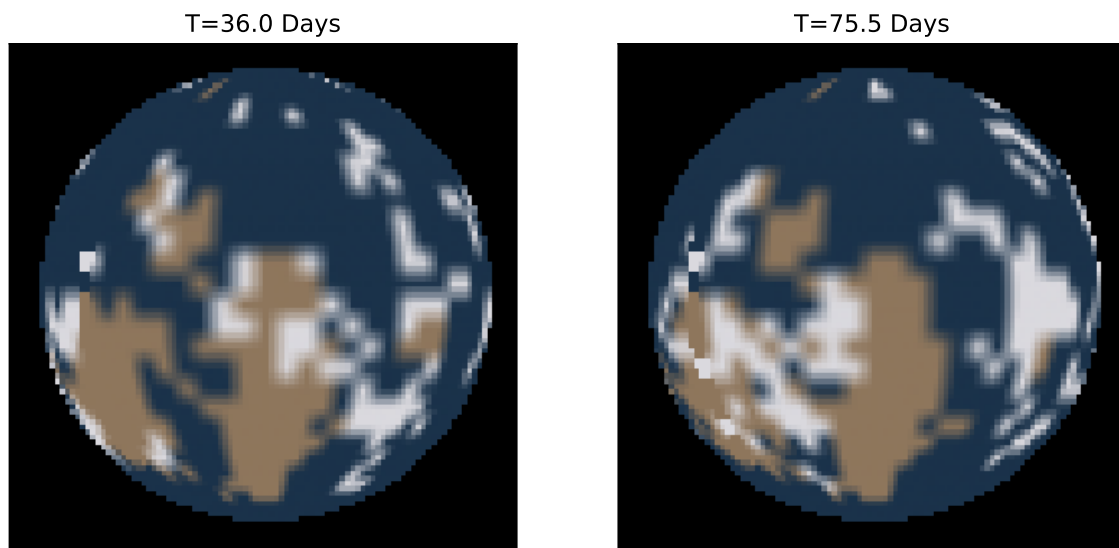


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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