

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging liuyi96 Planet 3

Tuesday 7<sup>th</sup> September, 2077

**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 optical 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:

```
110101011001100000001000011111000000100111000000100001000  
11100000100111111000111011000011001110110100110011010101  
011011001001110011010111100011100100010011100010011000101  
100101101011001101001001100010110101001110001001001110000  
000010101000001011101100000110111100010100011010010101010  
110111011111000000111111011110011010101000000010101110001  
01010011101101110000101001111111011111101111101010001010010100
```

This signal was first noticed at UTC 2077-04-06/13:42.

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

Spectral Type	M
Stellar Luminosity (Solar Units)	0.025
Stellar Mass (Solar Masses)	0.39
Distance to Star (lightyears)	40.6
Planet Mass (Earth masses)	0.8
Atmospheric Pressure (atm)	3.3

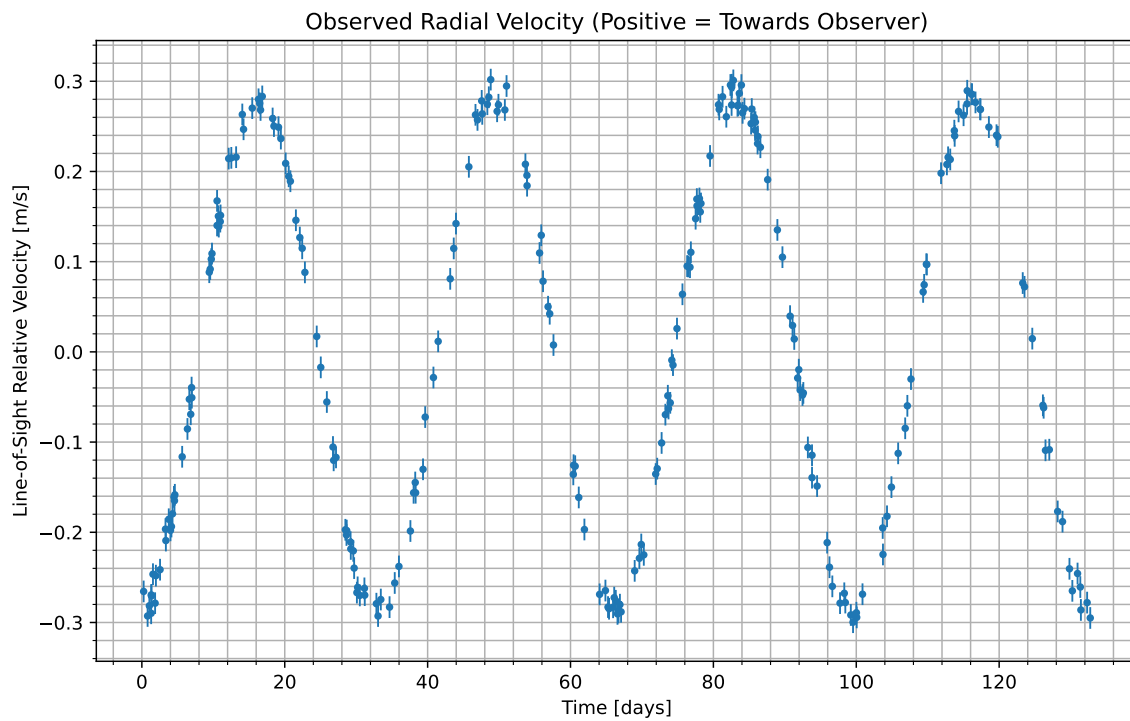


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2077-04-08/05:24. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	13.2
$CO_2$	80
$H_2O$	6.88

### Gas Abundance (percent by volume)

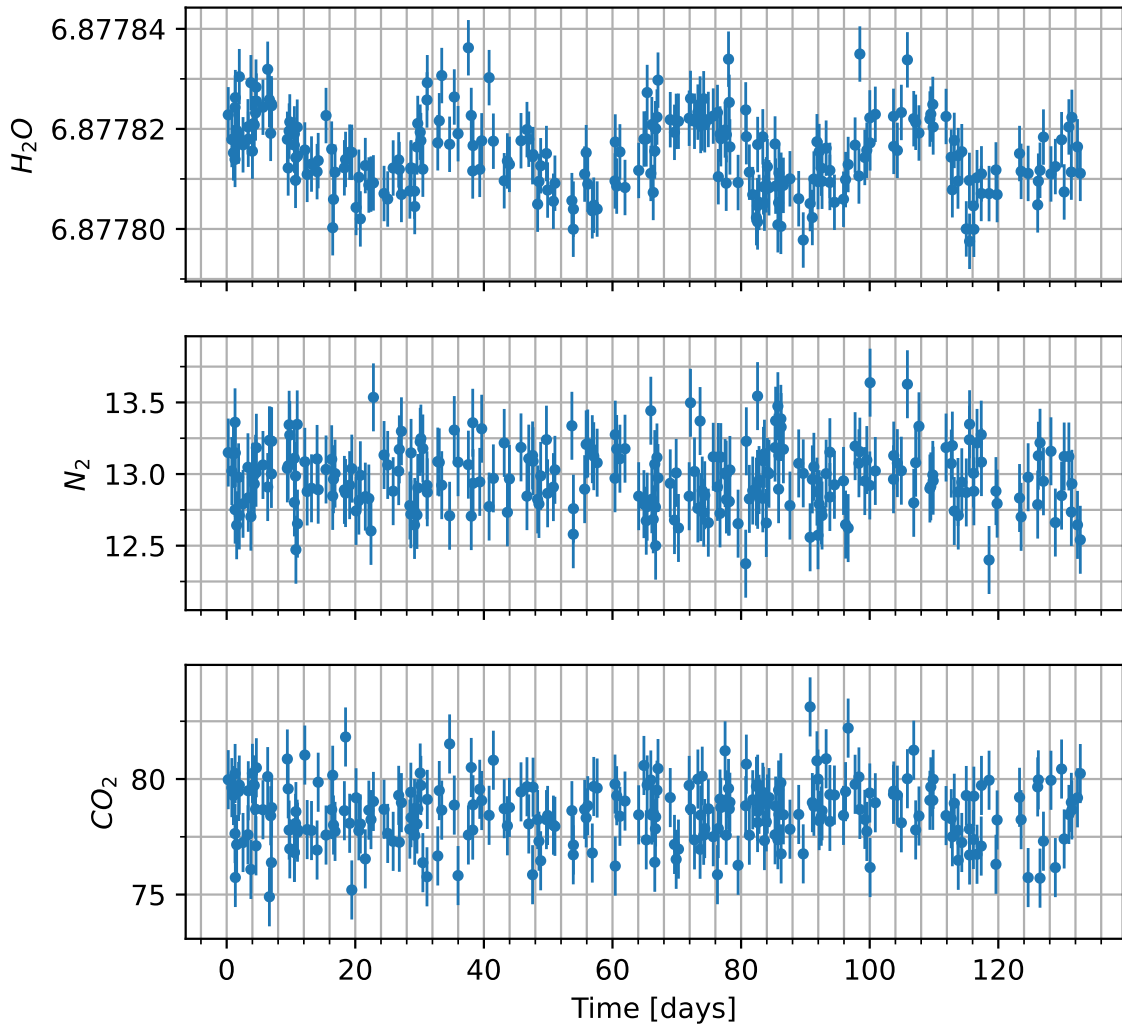


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

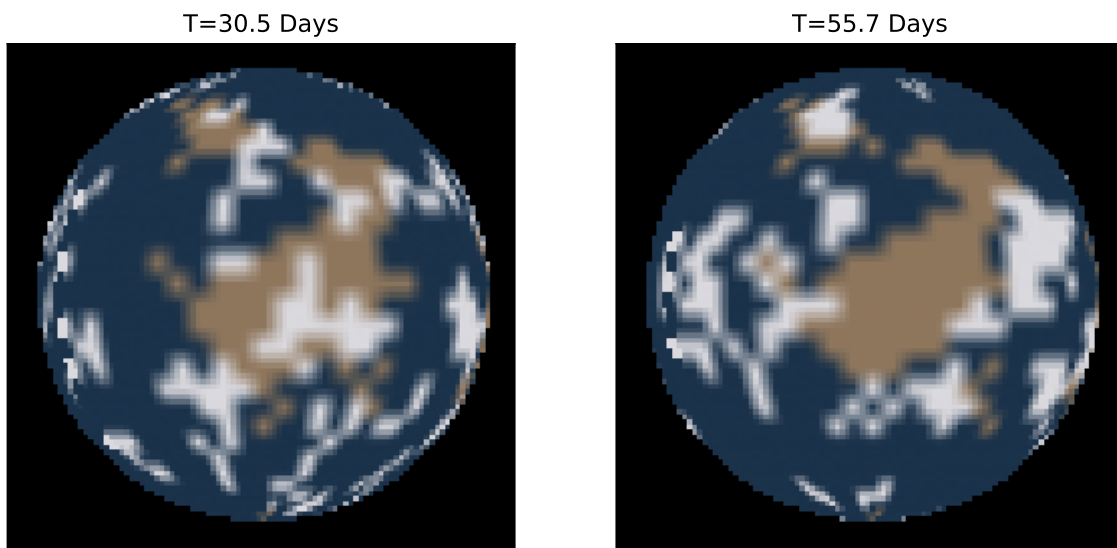


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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