

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

## fostocmi

### Planet 2

Sunday 3<sup>rd</sup> October, 2088

**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 lasted a short duration and then stopped. The transmission is shown below:

```
01101010110110100111011001100010101111110101010100000000001010111101111110001
11101010110110001000111001110101011100001111110110110111101011111010010010111
01101000100010010100100100011101100110001110000010110001100000011101000001100
00100101000011001100100000111100000011110100001010010010010011110001000100100
011000000011101011001011100011011110011010110110011111101100100011100010001100
011101011110101000101101110000111100001101110001010110011101011100101101010000
100010111110111010000110001010000101010001100101110000110001101011001100100110
```

This signal was first noticed at UTC 2083-02-05/05:00.

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

Spectral Type	F
Stellar Luminosity (Solar Units)	3.63
Stellar Mass (Solar Masses)	1.38
Distance to Star (lightyears)	27.9
Planet Mass (Earth masses)	3.1
Atmospheric Pressure (atm)	33.9

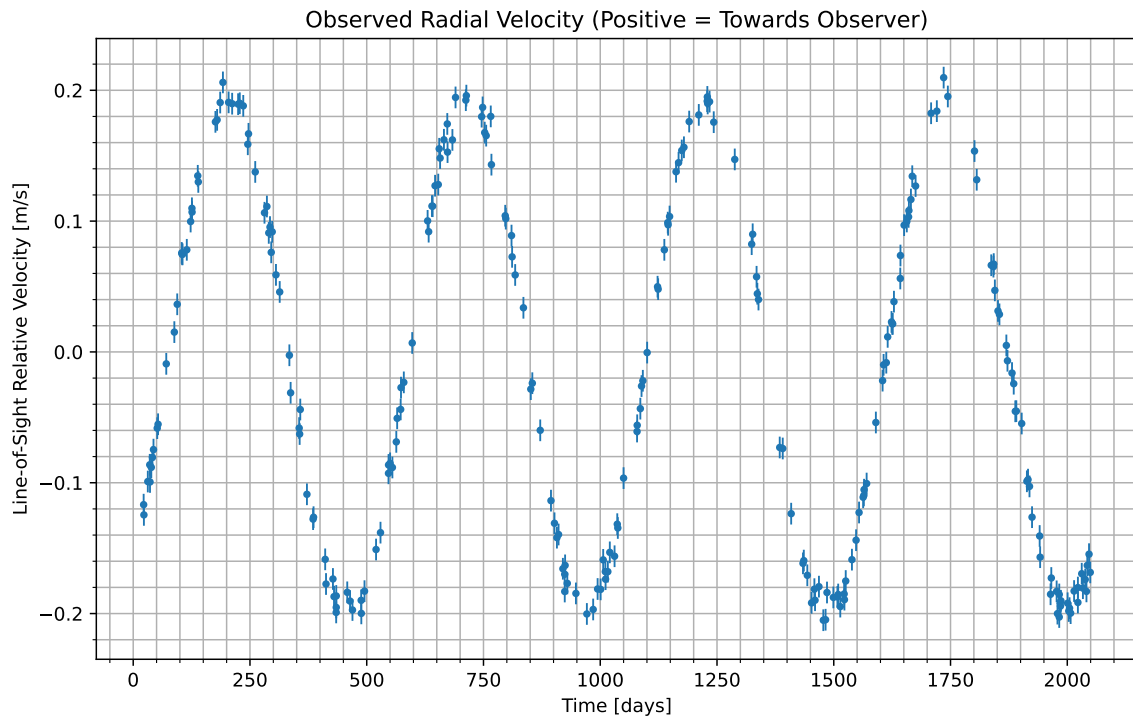


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2083-02-06/23:23. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	12.6
$CO_2$	61.7
$H_2O$	25.6

### Gas Abundance (percent by volume)

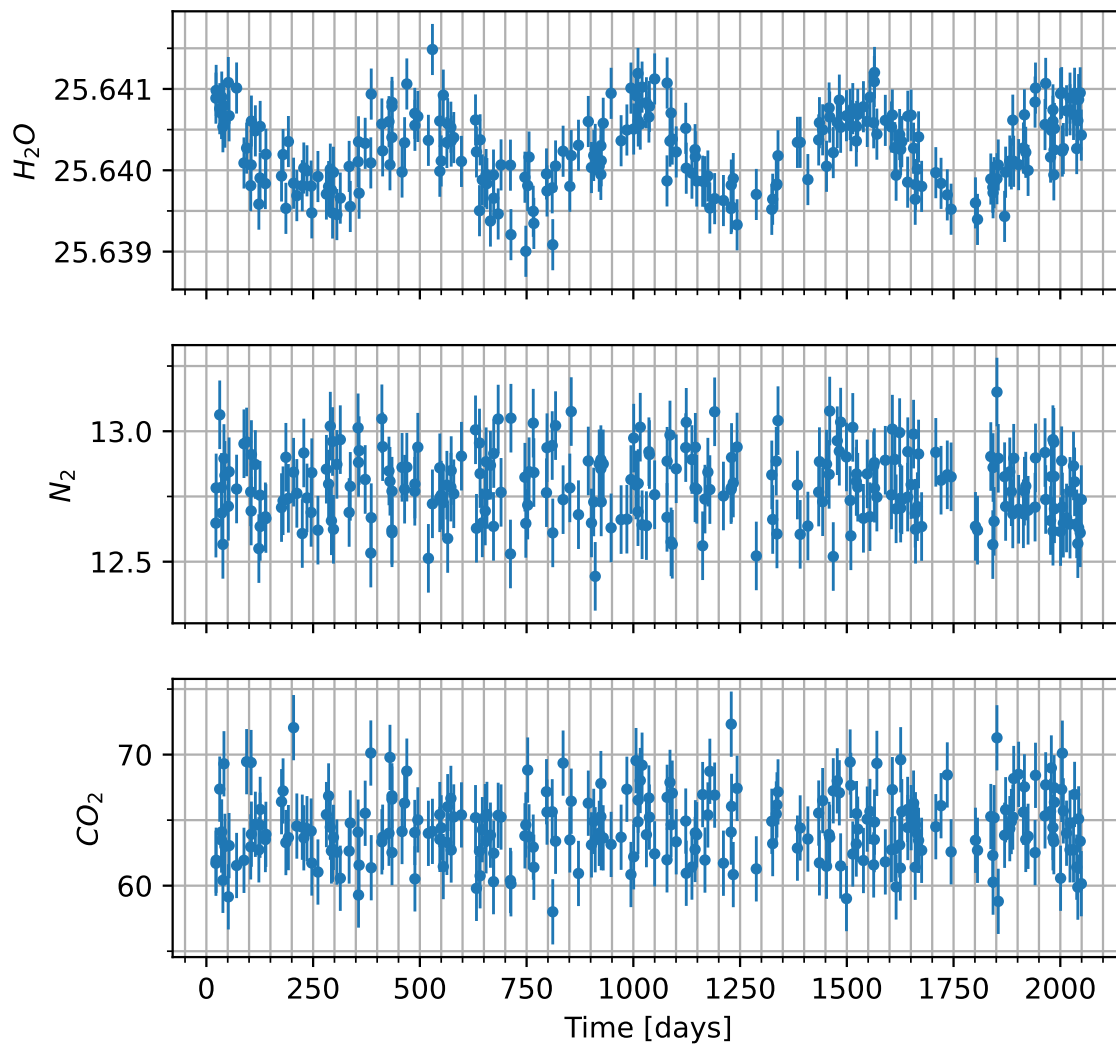


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

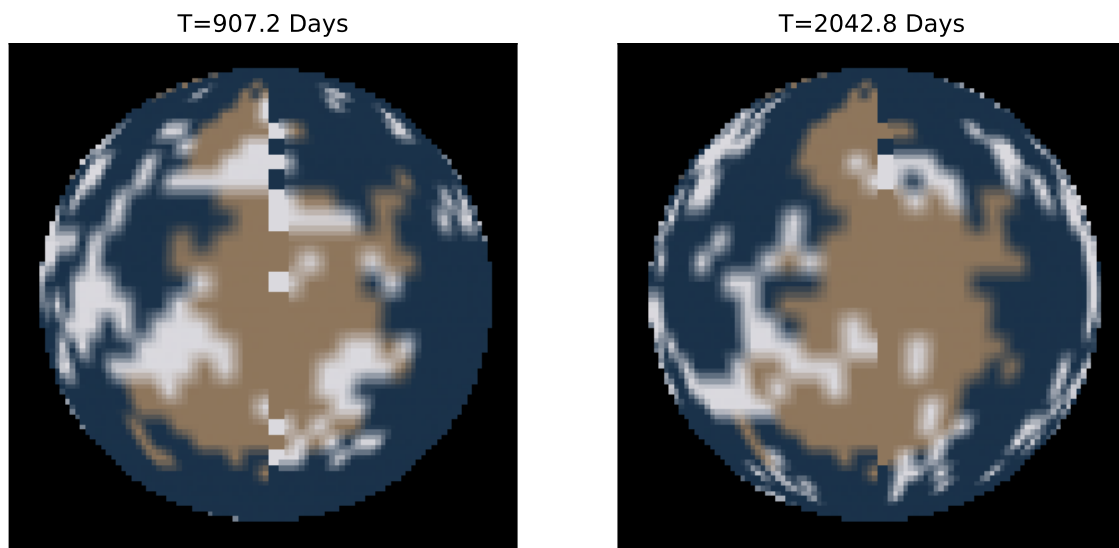


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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