

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging cheng392 Planet 2

Wednesday 4<sup>th</sup> October, 2079

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

```
111011001000001101000000111110100011010111001011
001001111001000010101001111101001001011011100101
00001110010110000000111100101000000010010101011
011010010111100010011101111100100011101111110010
001110010101001010010010101001100000010110001101
110010111000010111000010000010111001011000111001
110101111101011010100001101101111000011101001100
000001110001000101011000011100011000110111000100
111010110111100000001001010011000110001010110101
```

This signal was first noticed at UTC 2077-09-02/10:41.

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

Spectral Type	G
Stellar Luminosity (Solar Units)	0.809
Stellar Mass (Solar Masses)	0.949
Distance to Star (lightyears)	51.2
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	8.7

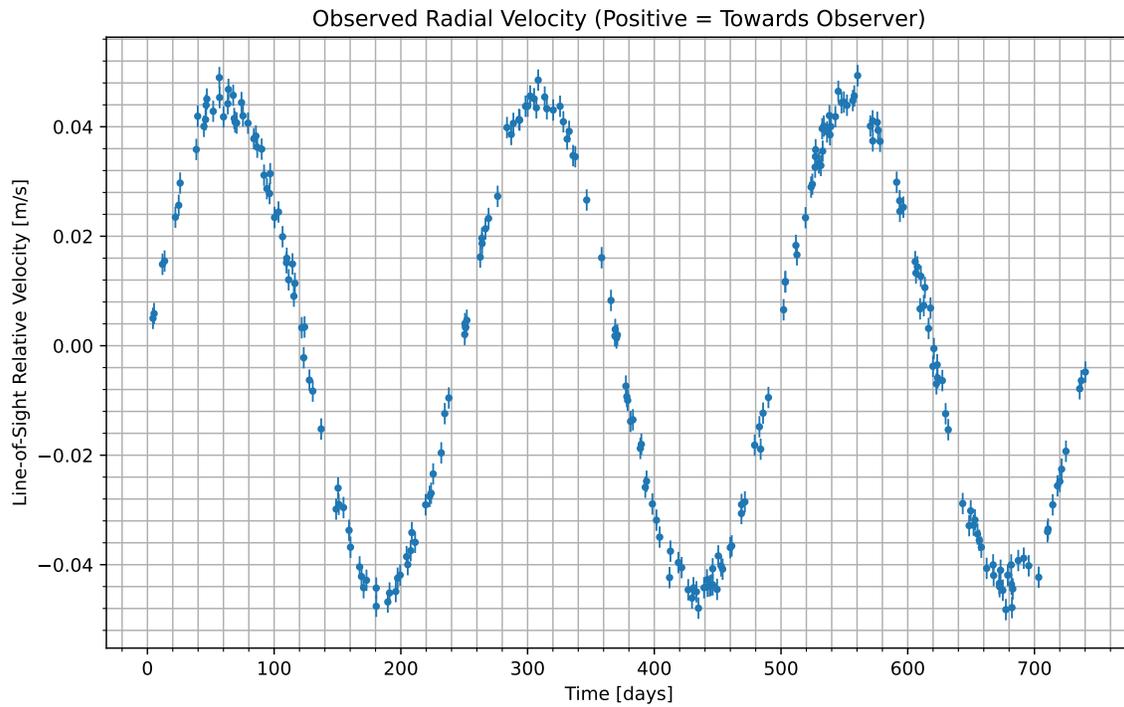


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2077-09-04/23:00. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	28.5
$CO_2$	63.5
$H_2O$	8.01

### Gas Abundance (percent by volume)

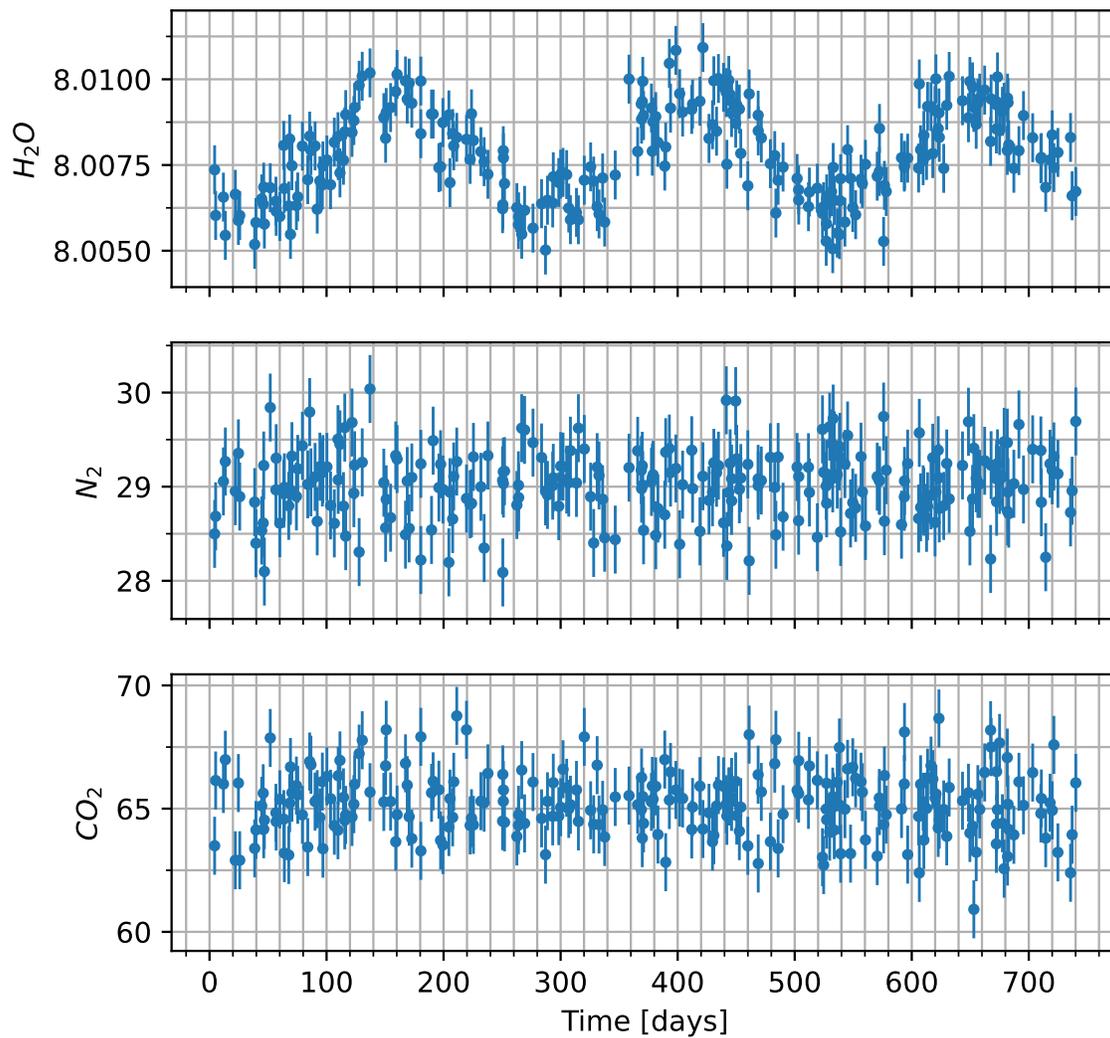


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

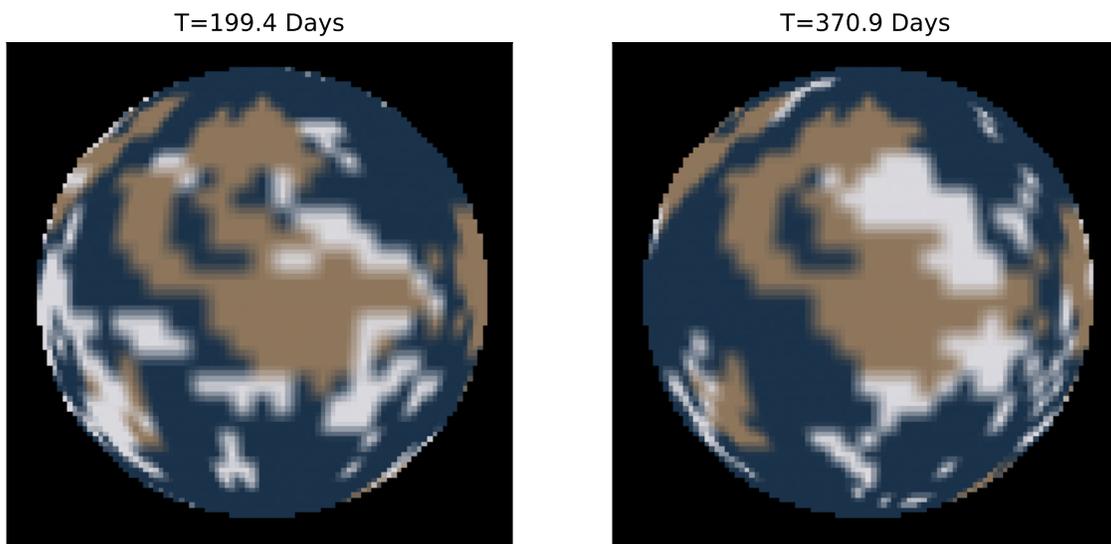


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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