

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging chenh139 Planet 2

Tuesday 21<sup>st</sup> October, 2098

**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:

```
00111010000100101111101000001000111101110010100011
10101100110110101101110101101011000110010000110101
00110111110001100100100010111001011011010110111110
11011001010100110011011011100011011001101101001110
10011010000010111010111110000011101111001011101011
10001000101011011001000100101001111101000001001011
00111111000111100011010010110001111001010011010001
00110011011010110111001000001001101000000111010000
00011110010001011001101011111001101010001000110111
```

This signal was first noticed at UTC 2097-03-24/16:56.

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

Spectral Type	K
Stellar Luminosity (Solar Units)	0.305
Stellar Mass (Solar Masses)	0.743
Distance to Star (lightyears)	14.7
Planet Mass (Earth masses)	4.4
Atmospheric Pressure (atm)	17.3

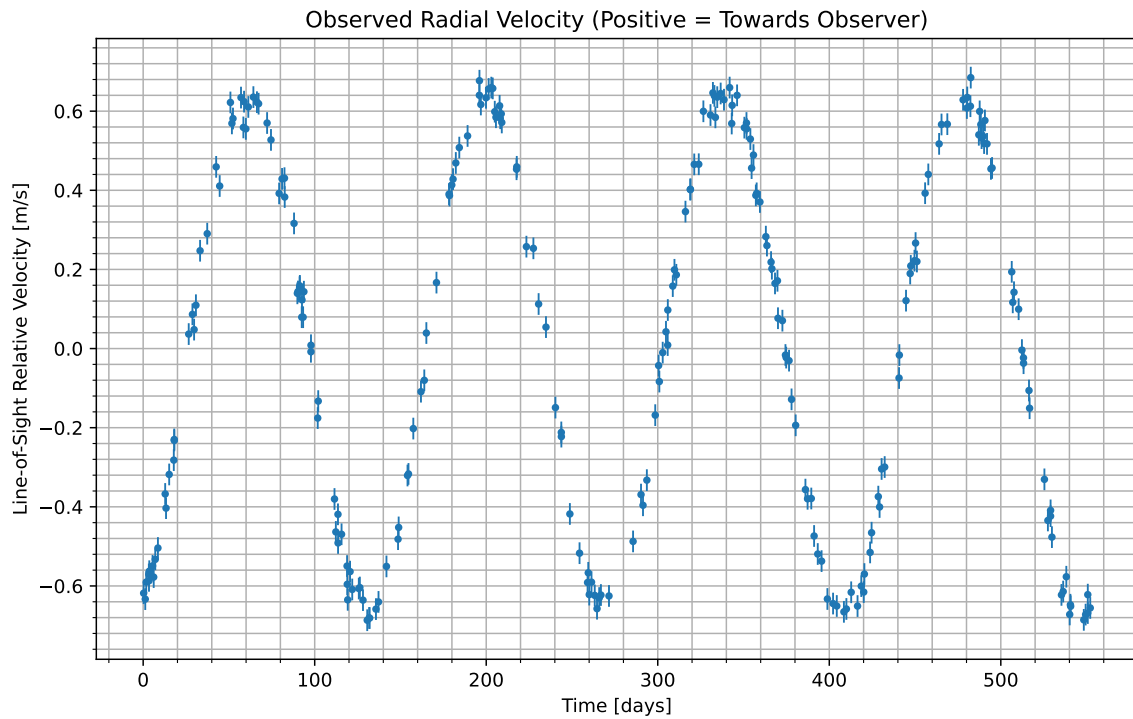


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2097-03-27/11:48. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	25.1
$CO_2$	42.5
$H_2O$	32.4

### Gas Abundance (percent by volume)

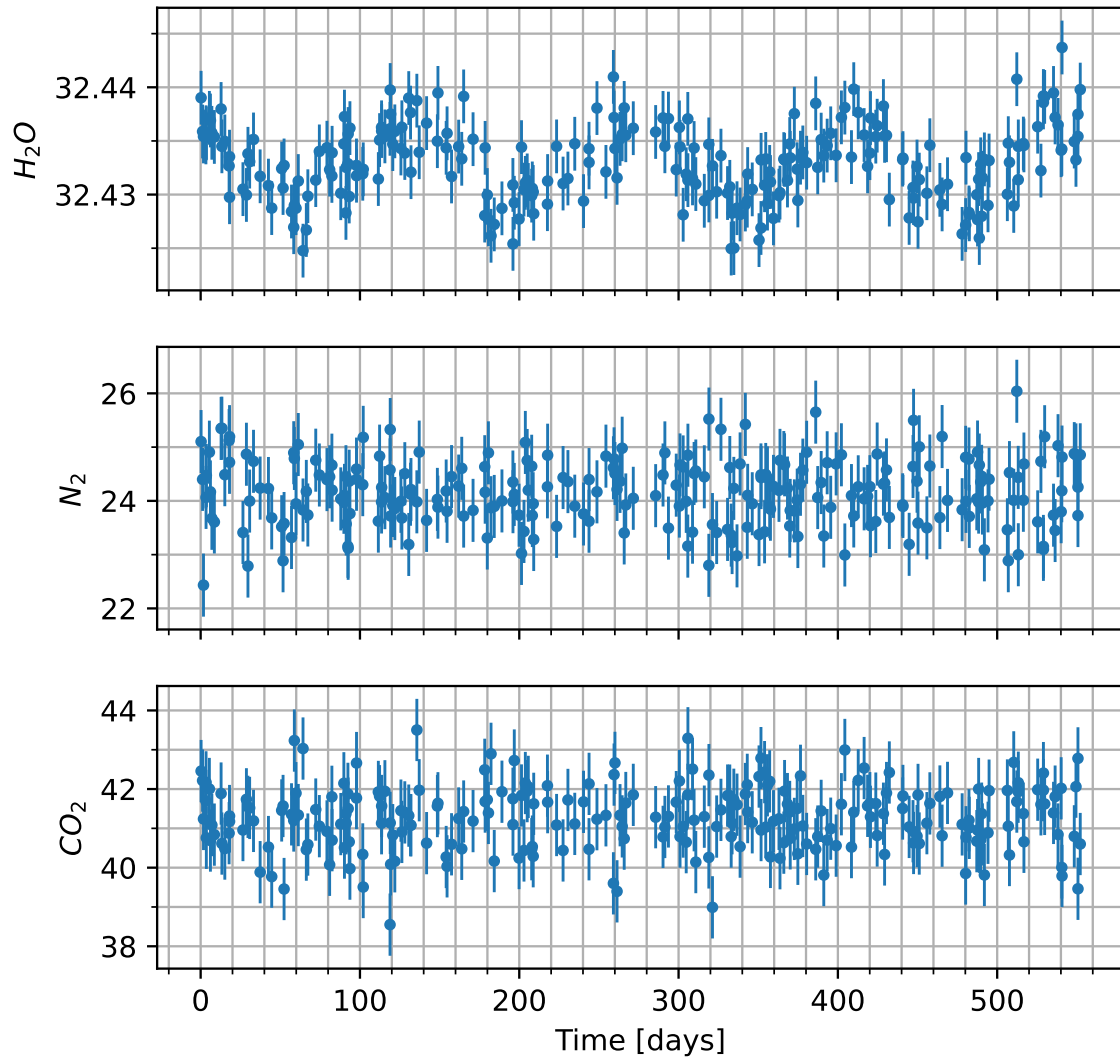


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

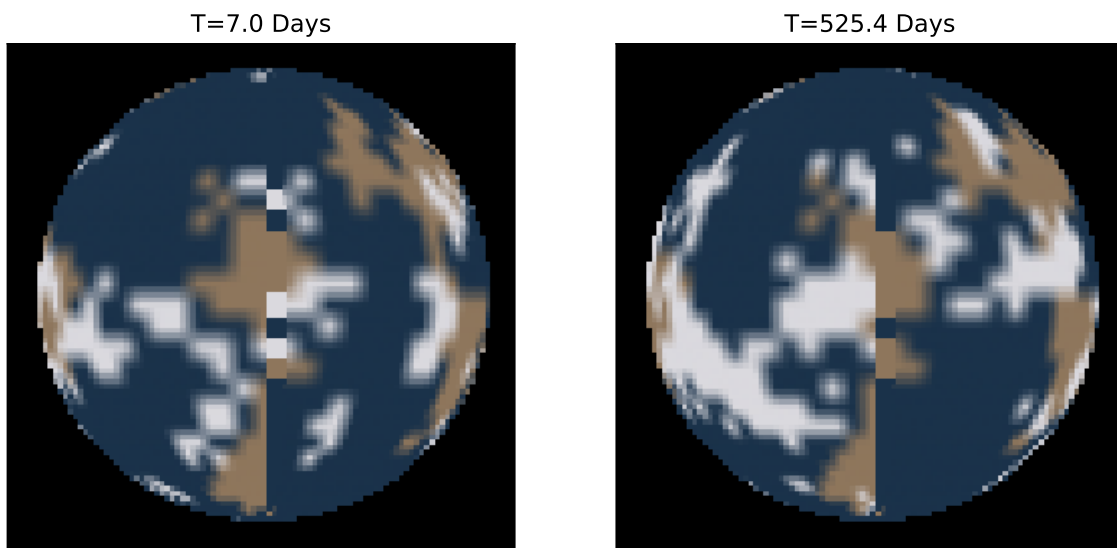


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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