

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

Tuesday 23<sup>rd</sup> June, 2082

**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:

```
100000100010000011101100110011110000100111000100000100001000011010  
10010111111000110100010000111011101111111100111010001110010000001  
100001011001100111101100000101100001001100000000111010100000111011  
111110001111111111101000100010001111010000110100111110100101011100  
010111001111010001110110110011010100101110111100011110100100100010
```

This signal was first noticed at UTC 2082-04-19/09:00.

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

Spectral Type	M
Stellar Luminosity (Solar Units)	0.000344
Stellar Mass (Solar Masses)	0.103
Distance to Star (lightyears)	197.3
Planet Mass (Earth masses)	3.0
Atmospheric Pressure (atm)	3.8

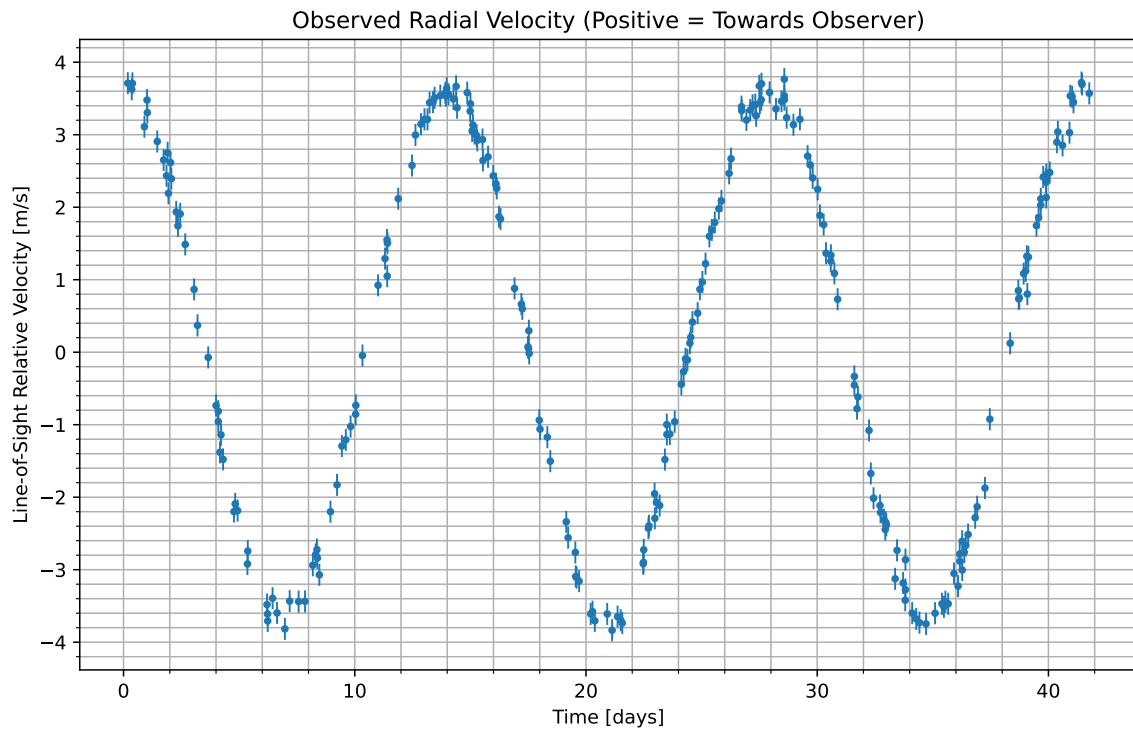


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2082-04-21/10:11. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	46.8
$CO_2$	32.5
$H_2O$	20.8

### Gas Abundance (percent by volume)

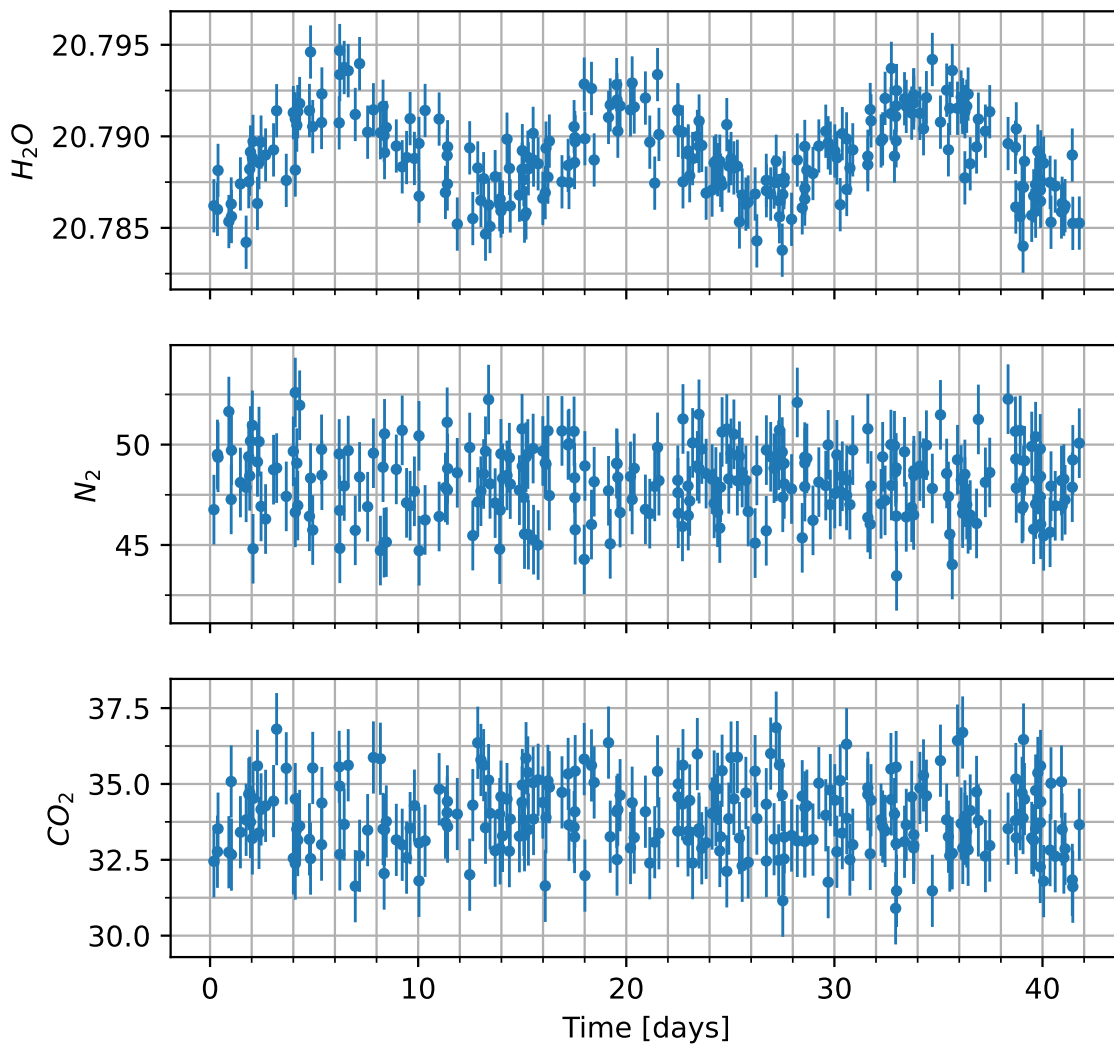


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

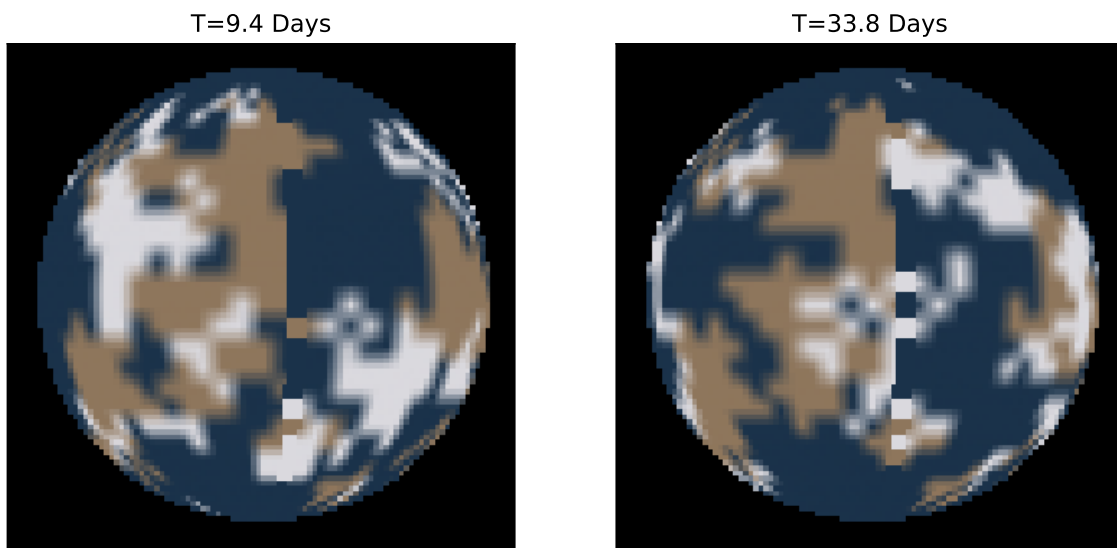


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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