

# Briefing

**To:** Captain Howard  
**From:** Astrophysics Group  
**CC:** Ships Computer  
**Date:** 05/06/02  
**Re:** Initial Conclusions from Astrophysical Observations

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## Summary

We have landed at one of the poles of Ziggy. It is currently winter at this pole. The sun will not rise for a quarter of a Ziggy year: we do not know how long this will be. Ziggy rotates around its axis roughly every 36 hours. Ziggy's moon is in an orbit that carries it over the poles. It rotates around Ziggy once every 720 or so hours. Its surface appears large and featureless.

## Our Location on Ziggy

- We are at one of the poles of Ziggy. We can tell this because the stars are doing circles around the zenith.
- Ziggy's day lasts around 36 terrestrial hours. We can tell this because the stars rotate around 10 degrees per hour.
- Ziggy must be either slightly less massive or less dense than the Earth, to account for the lower gravity.

## Why is it dark?

- The sun is currently directly beneath Ziggy. We can tell this because the moon appeared full when it was close to the zenith. It must therefore have been illuminated from somewhere behind us.
- Ziggy's rotation axis is inclined by roughly 90 degrees. This is necessary, as the sun could not otherwise pass over the opposite pole (where it must be at present).
- At our current location, the sun will be above the horizon for half a ziggy year, and then below the horizon for half a ziggy year, just like at the poles of the

Earth. At present, we are half way through the dark period (winter). Half way through the light period, the sun will be almost directly overhead for a long period. This will probably cause a dramatic increase in the temperature.

### **Ziggy's Moon**

- The moon is in an orbit that carries it nearly over both poles of Ziggy. It was nearly over our pole when we landed, and is now moving towards the other pole.
- The observed spiral motion is due to a combination of its orbital motion (a slow downward motion that will carry it all the way around Ziggy in around 700 hours) and our rotation.
- Its brightness and size indicates that it is either closer to us than Earth's moon, or larger, or both. It may be made of a more reflective substance. Its featureless surface suggests that it may be covered by clouds, much like Venus.