Thesis: The Aurora Polaris is “a luminous glow of the upper atmosphere” (Lummerzheim 1), best understood through its related mythology, vocabulary, and scientific cause.

Audience Analysis: *Many members of this class expressed interests in science and history during class discussions and during the Introduction Speeches. This presentation allows a blending of scientific understanding of auroras as well as a look at the historical explanations offer through mythology.*

I. Introduction
A. Hook: Strange constellations sparkled through the gloom: the pole was all afire, and torches flew across the depths of heaven; With horrid hair, a comet blazed from east to west and threatened change to kingdoms.” This is a quote from Marcus Lucalus in his book “Pharsalia” (Lucan 15).

B. Background: The Aurora is an astronomical phenomenon that has mystified people for thousands of years.

1. According to Neil Davis from the University of Alaska, it is also known as the Northern Lights or Aurora Polaris (Davis 1).

2. Occurs at both the North and South Pole.

a. North= Borealis.

b. South= Australis (Davis 2).

3. Dirk Lummerzheim from the Geophysical Institute states that the aurora is constant if viewed from a satellite (Lummerzheim 8).

4. But "What is the Northern Lights?" from the Library of Congress says that it is best seen in winter in northern latitudes ("What Are the Northern Lights?" 2).

5. Davis states that auroras were first called auroras in 1619 by Galileo (Davis 1).

6. Lummerzheim informs that auroras also occur on Saturn and Jupiter (Lummerzheim 11).

C. Thesis: The Aurora Polaris is “a luminous glow of the upper atmosphere” (Lummerzheim 1), best understood through its related mythologies, associated vocabulary, and scientific causes.
(PAUSE AFTER THESIS)

II. Mythological Explanations of Auroras

A. According to Christina Shaw from the University of Alaska, in Scotland, battles in the sky

B. In Medieval art, candles

C. In Northern Hibrides, Blue Men/Merry dancers

1. Fighting caused movement in aurora.
2. Red of aurora represented blood (Shaw 5).

D. Michael Duomo, curator for Institute for Dynamic Educational Development, states that in Rome,auroras are called chasmata, or “mouths of celestial caves”

E. In Aboriginal Australia, gods dancing

F. In Aboriginal Scandinavia, mystic powers to resolve conflict

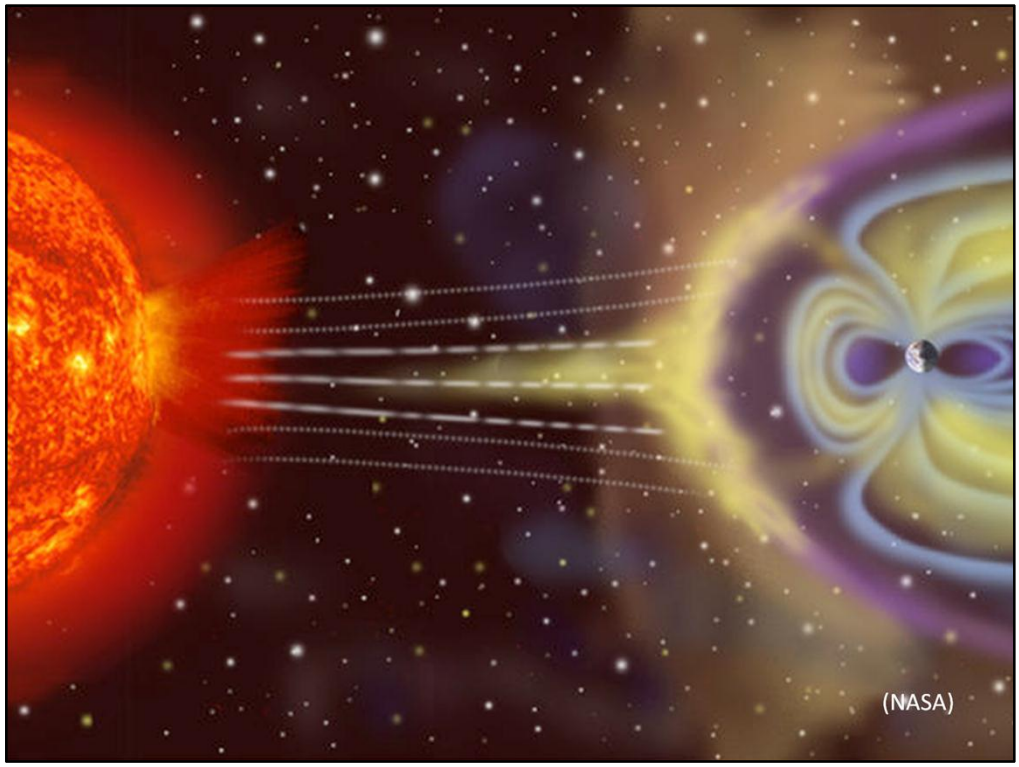
G. In Norse Mythology, possibly Bifrost

1. Bridge
2. Earth and Asgard

H. In Viking culture, Freya riding horseback (Duomo 1)

I. In Greenland, best part of afterlife

1. Reward
2. Play with walrus heads (Duomo 2)



III. Technical Vocabulary Associated with Auroras

A. Solar Winds

1. Lummerzheim states that the Sun has its own atmosphere and magnetic field.
2. Protons and electrons fizz off.
3. Streams of charged particles.
4. 11-year cycle (Lummerzheim 6).

B. Plasma

1. According to an article from U California named “What Makes Them Happen?” plasma is not atoms or molecules.
2. Protons and electrons.
3. Force of Northern Lights (“What Makes Them Happen?” 1).

C. Magnetic Field

1. North and a South Pole.
2. Bar magnet metaphor.
3. Lines of magnetism closer at poles.
4. Stronger magnetism at poles.
5. Charged particles parallel to lines of magnetism.
6. Shape charges according to solar wind, forming a magnetotail (“What Makes them Happen?” 2).

D. Ionosphere

1. Earth’s upper atmosphere.
2. Location of Aurora (“What Makes Them Happen?” 3).

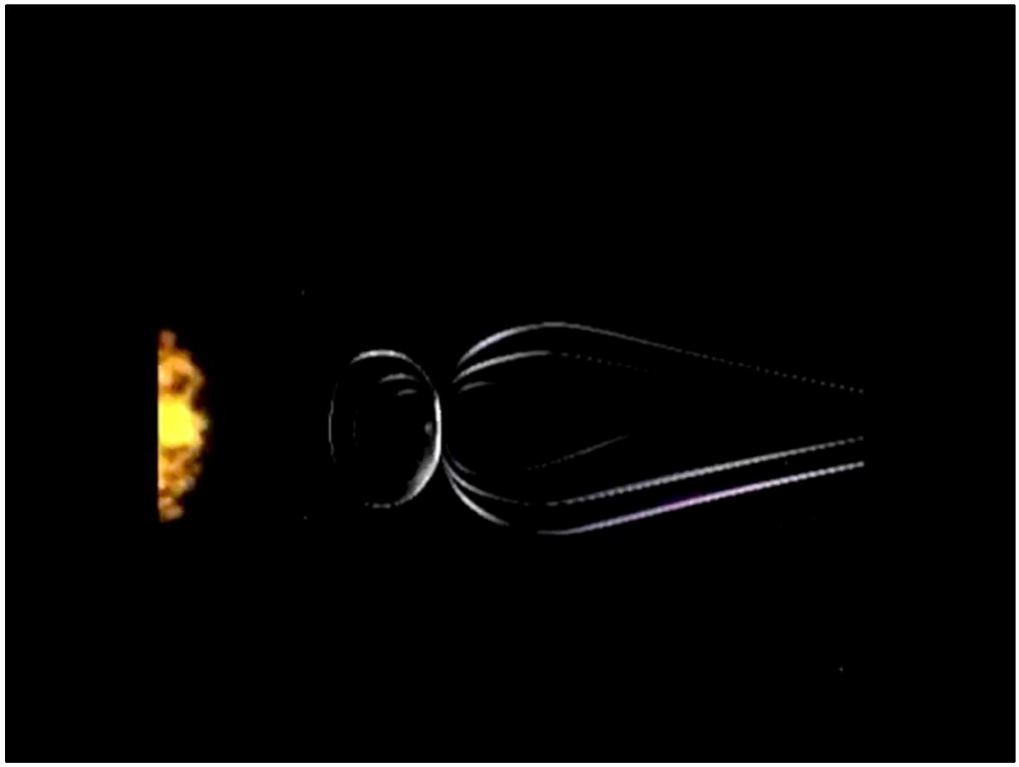
IV. Causes of Auroras

A. Solar wind

1. “What are the Northern Lights?” says Coronal Mass Ejection (solar flare) of plasma hits the magnetic field (“What are the Northern Lights?” 1).

2. According to Lummerzheim, these charged elections and protons head towards the poles in lines of magnetism.

3. Electrons collide with atoms in the ionosphere (Lummerzheim).



B. Day and Night Auroras

1. According to a video called “Space Weather and the Earth’s Aurora from NASA, day auroras hit directly from the sun as the magnetic shields pass the earth, changed by the plasma from solar wind.

2. Night auroras result from the magnetotail’s reconnection, after the magnetic field has passed the earth (*Space Weather and the Earth’s Aurora*).

C. Cause of colors

1. Christina Shaw informs that electrons give off energy as light to return to their energy levels.

2. Different elements give off different wavelengths, so different colors (Shaw 3).

V. Conclusion

A. Although cultures have had many different myths about the aurora, the scientific cause is charged particles that hit atoms and molecules in the ionosphere, causing them to release light.

B. Recap of Main Points

1. Mythology of numerous cultures
2. Associated Vocabulary
3. Scientific Causes

C. This so-called “curtain in the sky” phenomenon has mystified people for thousands of years, and will for thousands of years to come.

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(Vanderkroew)