ANNOUNCEMENTS

- Lingering MIDTERM EXAMS can be picked up AT THE END OF THIS LECTURE FROM BOBBY WALLACE

- HOMEWORK #6 DUE TODAY. HOMEWORK #7 AVAILABLE AFTER CLASS AND DUE NEXT THURSDAY.

- DECISIONS ON MIDTERM/FINAL/RESEARCH PAPER DUE TODAY....just after class ON NEXT TUESDAY!

- FISKE PUBLIC SHOWS FOR EXTRA CREDIT including TONIGHT AND TOMORROW NIGHT AT 7pm ON GLOBAL WARMING.

- HAPPY SAMHAIN !!!

- LIKE POLYNESIAN NAVIGATION, THE RETURN OF MAYA LANGUAGE AND HISTORY HAS BEEN EMPOWERING FOR THESE PEOPLE
ANOTHER “FEAST” FOR DOOM SAYERS:

THE END OF THE LONG COUNT CYCLE on 21 DECEMBER 2012 CE

CORRELATION BETWEEN LONG COUNTS AND GREGORIAN CALENDAR (called “AHAU EQUATION”) STILL CONTROVERSIAL..

BUT BEST GUESS START:

13 AUGUST 3113 BCE…NEXT
13 AUGUST 3114 BCE …but some

Other correlations suggest start dates 300 years after and 520 years before the above dates.
<table>
<thead>
<tr>
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<tr>
<td>MAYA LONG COUNT</td>
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<tr>
<td>GREAT WORLD AGES</td>
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<td>2150 YRS</td>
<td>c. 0 CE</td>
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<tr>
<td>INDIAN MAHA YUGA</td>
<td>KALI YUGA</td>
<td>432,000 YRS</td>
<td>c. 3102 BCE</td>
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</table>
GREAT WORLD AGES DEFINED BY THE “PRECESSION OF THE EQUINOXES”

- THE PRECESSION OF THE EQUINOXES IS THE SYSTEMATIC SHIFTING OF THE SPRING EQUINOX LOCATION THROUGH THE ZODIAC CONSTELLATIONS DUE TO A “WOBBLING” OF THE EARTH’S POLAR AXIS IN SPACE.

- INSTEAD OF FALLING OVER THE SPINNING EARTH IS A STABLE “GYROSCOPE”. It’s great mass creates a huge interia against being tipped over. Instead it precesses!

- Precession of the Earth is VERY SLOW...one rotation every 26,000 years.
THUBAN WITHIN A FRACTION OF A DEGREE OF THE POLE IN 2800 BCE

THE EFFECT OF PRECESSION IS TO CHANGE THE RELATIONSHIP BETWEEN THE POLE AND THE POLAR STARS
ASTRONOMICAL “COLURES” = location of Solstices and Equinoxes amongst the stars TODAY

CORRESPONDENCE ABOVE BETWEEN STARS AND TIME OF YEAR WAS NOT ALWAYS THE WAY IT IS TODAY! {THE WORLD HAS SHIFTED !!!}
ASTRONOMICAL "COLURES"

EA

MARDUK

SCORPION MAN

TIAMAT

C. 3000 BCE

CORRESPONDENCE ABOVE BETWEEN STARS AND TIME OF YEAR WAS NOT ALWAYS THE WAY IT IS TODAY! {THE WORLD HAS SHIFTED !!!}
**Precession of the Equinoxes:** Officially Discovered by Hipparchos of Rhodes c. 200 BCE but almost certainly known to the ancients for millennia.

Precession of the Earth's axis in space moves the location of the sun relative to the stars. Over the centuries, the position of the vernal equinox shifts through the stars of the zodiac. At the present time, the vernal equinox is located in the constellation of Pisces, the Fishes. In 200 BCE, however, still considered the sign of Aries. Signs of the zodiac are not isochronous or in exact or precise positions with the constellations they name. The sign of Aries the Ram is actually among the stars of Pisces the Fishes.

(Drawing: Robin Foxman Kropp)

 shift has been by ~ 1 zodiac constellation since Ptolemy's time.

Vernal Equinox = March 20-21

How the ancients would have known?

Spring Equinox Sun rises due east

2000 BC

Pisces in sky before dawn

0 AD

Pisces rises with the Sun

Today

Pisces rises after the Sun

It has been "drowned" at equinox dawn.
“WHEN YOU NOTICE THE PLEIADES RISING, START YOUR REAPING, AND ON YOUR SOWING WHEN THEY ARE SETTING. THEY ARE HIDDEN FROM YOUR VIEW FOR A PERIOD OF FORTY FULL DAYS, BOTH NIGHT AND DAY, BUT THEN ONCE AGAIN AS THE YEAR MOVES AROUND, THEY REAPPEAR AT THE TIME FOR YOU TO BE SHARPENING YOUR SICKLE.” HESIOD OF GREECE, 9th CENTURY, BCE

THIS TIMING WOULD PLACE THE HELIACAL RISE OF THE PLEIADES AT END OF MARCH/BEGINNING OF APRIL…. TODAY THE HELIACAL RISE OF THE PLEIADES IS IN EARLY/MID-JUNE…. “the world has shifted!”

- **TARAJUNGO** IN MALI
- **MATARIKI** IN POLYNESIA
- IN JAPAN THEY ARE **SUBARU**
- TO THE LAKOTA INDIANS: **WINCHIALA SAKOWIN**
- TO THE INCA THESE STARS ARE CALLED **COLCA**
EARTH “PRECESSES” ...MEANING ITS SPIN AXIS (POLES) WOBBLE IN SPACE DUE TO THE COMBINED GRAVITY OF ALL THE PLANETS + SUN TRYING TO “pull it down” INTO THE ECLIPTIC PLANE ➔ wobbles VERY SLOWLY. Takes ~ 26,000 years to wobble once around.

When pushed, spinning tops don’t fall down... stabilized by their spin, instead they “precess”...a fancy word for wobble.
THE POLE STAR IS NOT A CONSTANT!

For most of civilization there has been NO Pole Star

PRECESSION SHIFTS STARS ALONG THE ECLIPTIC RELATIVE TO THE SEASONS ➔ SHIFT IS EAST—WEST IN THE SKY.

TOWARDS THE NORTH THE SHIFT IS MORE DRAMATIC (LARGER) AND SHIFTS CAN BE NOTICED EVEN IN A FEW DECADES IF CAREFUL MEASUREMENTS ARE BEING MADE!!
Today and for more than 1000 years, the Big Dipper “pointer stars” are due North when vertical!

c. 2500 BCE the “pointer stars” did NOT point to the North Celestial Pole and so were NOT vertical when due North! ➔ Precession “messes up” this method to determine true North
PERIOD OF FULL PRECESSION OF EARTH’S POLES IN SPACE = 26,000 YEARS.

“MOVES” ASTROLOGICAL SIGNS BY ONE CONSTELLATION:

e.g., DIRECTION OF MID-SUMMER c. 200 CE (Ptolemy) was at very end of Gemini/beginning of Cancer in Ptolemy’s time. Now it is between Taurus and Gemini in the sky today. Astrologically still at start (west end) of Cancer.
CORRESPONDENCE ABOVE BETWEEN STARS AND TIME OF YEAR WAS NOT ALWAYS THE WAY IT IS TODAY! \{THE WORLD HAS SHIFTED !!!\}
## The “GREAT WORLD AGES”

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# Mythic Time: The Great World Ages

<table>
<thead>
<tr>
<th>Age</th>
<th>Approx. Dates</th>
<th>Sun in ? @ Mar 21st</th>
<th>&quot;Ruling Planet&quot;</th>
<th>Pole Star</th>
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<tbody>
<tr>
<td>Golden</td>
<td>6000-4000 BCE</td>
<td>Gemini</td>
<td>Saturn</td>
<td>Thuban (Zeus)</td>
</tr>
<tr>
<td>Silver</td>
<td>4000-2000 BCE</td>
<td>Taurus</td>
<td>Jupiter</td>
<td>Thuban (Zeus)</td>
</tr>
<tr>
<td>Copper</td>
<td>2000-0 BCE</td>
<td>Aries</td>
<td>Mars</td>
<td>Aries (Aries)</td>
</tr>
<tr>
<td>Iron</td>
<td>0-2000 CE</td>
<td>Pisces</td>
<td>Venus</td>
<td>Polaris (Aphrodite)</td>
</tr>
<tr>
<td>New</td>
<td>2000-4000 CE</td>
<td>Aquarius</td>
<td>Mercury</td>
<td>Hermes (Hermes)</td>
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GREEK CONSTELLATIONS

➢ REALLY MOSTLY BABYLONIAN, ALTHOUGH SOME MAY BE OLDER STILL... e.g., GREAT BEAR AND TAURUS

➢ ZODIAC ORIGINALLY JUST FOUR AT SOLSTICES AND EQUINOXES circa 3000 BCE: MARDUK (BULL-MAN = TAURUS), WINGED-LION (=LEO), SCORPION-MAN (=SCORPIO) & EA, GOD OF CREATION & THE WATERS (=AQUARIUS)

➢ PRECESSION ALLOWS US TO APPROXIMATELY DATE AND LOCATE WHEN AND WHERE THESE CONSTELLATIONS WERE DEVISED DUE TO WHICH CONSTELLATIONS CAN NOT BE SEEN DUE TO BEING BELOW THE SOUTHERN HORIZON. ANSWER CIRCA 1300 BCE IN ASSYRIA (NOW NORTHERN IRAQ/SOUTHERN TURKEY) BUT CONSTELLATIONS DID ARISE OVER MANY CENTURIES

➢ GREEKS FILLED THE SKY WITH DEPICTIONS... NO AREAS LEFT UN-NAMED.

➢ GREEKS ADDED HEROES, HEROINES, MONSTERS, EMBLEMS OF GREAT DEEDS... DEIFICATION OF INDIVIDUAL HUMANS LIKE HERCULES, PERSEUS, ORION, ANDROMEDA