

StarDate: March 7, 2004

Denebola

Leo, the lion, prowls through our evening sky this month, and stands high overhead around midnight. Its two brightest stars mark opposite ends of the constellation. Regulus, the heart of the lion, is at Leo's western edge. And the second-brightest star, Denebola, marks Leo's tail at the constellation's eastern end. Look for it above and to the left of the full Moon this evening, and to the lower left of the brilliant planet Jupiter.

The name Denebola evolved from the ancient Arabic name Al Dhanab al Asad -- the lion's tail.

Like the Sun, Denebola is a main-sequence star -- a sedate, comfortable star in the prime of life. But Denebola is a blue-white star, which means that its surface temperature is several thousand degrees hotter than the Sun's. And if you placed the two stars side by side, Denebola would appear about 15 times brighter than the Sun. This means that Denebola's consuming its nuclear fuel at a faster rate, so it'll live a shorter life.

Denebola is about 40 light-years from Earth. In other words, a beam of light -- speeding along at almost six TRILLION miles every year -- takes 40 years to travel from Denebola to Earth. The light we see from Denebola tonight left the star not long after the first humans were launched into space.

If intelligent beings live on planets in orbit around Denebola, they should just now be receiving the television broadcasts of those early missions.

We'll talk about another prominent star tomorrow.

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StarDate: March 15, 2004

Spring Triangle

Summer and winter offer two of the most prominent geometric shapes in the night sky - the Summer Triangle and the Winter Circle. These patterns of bright stars dominate the evening sky during their respective seasons -- and the Winter Circle is STILL in view in the west as darkness falls.

There's no well-recognized shape for spring, but perhaps there should be. Three bright stars form a tall triangle in the east beginning around 9 p.m. The stars are spread pretty far apart, but they still stand out -- especially from cities, where bright lights overpower most of the fainter stars.

The most prominent member of this triangle is Arcturus, the third-brightest star in the night sky. It's in the constellation Bootes, the herdsman. This brilliant yellow-orange star is low in the east in mid-evening, and wheels high across the sky during the night. It's a type of star known as a giant, which means it's old and bloated -- a preview of what our own Sun will look like in several billion years.

Well to the right of Arcturus, just a little lower in the sky, you'll see Spica, the brightest star of Virgo. And well above Spica and a little to its right is Regulus, in the constellation Leo. These stars are quite similar. Like the Sun, they're both in the prime of life. But they're hotter than the Sun, so they shine brighter and bluer.

Look for the bright but wide-spread "Spring Triangle" in the east beginning around 9 o'clock.

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Using StarDate Resources in Your Classroom

You can integrate the information from our radio programs, FAQs, image gallery and into daily learning experiences in your classroom in a variety of ways. Some suggestions follow for using them to enhance your students' understanding of astronomy and its relation to other subject areas.

Listening Skills

StarDate can provide an opportunity for students to improve their listening skills. Teachers who preview the daily program may ask questions about the program to help students focus on the daily topic. Written scripts are available on-line each day through the StarDate Online web sites. Some teachers broadcast the program over the school intercom each day.

To go beyond passive listening, have your students take notes. Some teachers have found that students are more prepared to discuss the topic if they listen, take notes, then listen a second time to check their notes.

With their emphasis on objects in the sky, StarDate are great sources for homework assignments. For this reason, some teachers play StarDate or Universo at the end of class as they make an assignment.

Students can keep personal observing logs to record their own observations throughout the year. Their StarDate or Universo notes prepare them to go outside and sketch what they see.

Create a resource station where students file information they have gathered from the programs. Students may file their own drawings, data, and papers as well. Students may create a computer database of the information filed at the resource station. Some teachers use this station as a reference source for assignments.

Cross-Curriculum Connections

You can incorporate StarDate into many subject areas, including:

Language Arts and Social Studies

Have students keep a StarDate journal with their summaries of the programs and answers to the pre-listening questions. Journal entries may consist of phrases, sentences, paragraphs, or drawings to illustrate the core concept.

Encourage students to think on a large scale. For example, in teaching a unit on Thoreau, ask them to consider the vastness of the universe, using the radio shows to spark abstract thought and prepare them for existential literature.

Use the StarDate program transcripts, FAQs, and research project descriptions as supplemental reading materials.

Encourage students to explore the historical context and relevance of the events and lives of the astronomers described in the research projects. Students can make a timeline of these events.

Use the programs to explore the cultural perspectives relating to astronomy and to teach about the impact of celestial events on cultural development.

Mathematics

Students can use graphs and charts during the skywatching activities. They can apply concepts of proportion and percentage as they compare the sizes of planets or the distances between planets within our solar system. They can estimate times and relative distances.

Older students can apply principles of geometry and trigonometry as they explore the angles and orientations of planets and satellites or the position of the Sun or Moon in the sky throughout the day or year.

Fine Arts

Encourage students to make drawings of their concepts related to the StarDate programs. For example, if the program is about sunsets, they can draw their ideal sunset, which might lead into a discussion of the Sun's color and why it appears redder at sunrise and sunset. Or, for a program about space flight, students might draw their view of a rocket in space visiting another planet or a comet.

Astronomy-related music has been popular for centuries. Your students may be more familiar with John Williams' score for *Star Wars* than Holst's *The Planets*, but both pieces can be used as a trigger for combining their ideas about astronomy with music.

Individualized Learning

Because StarDate topics range from basic to more complex concepts, you can use them with students of all ages and ability levels.

With a copy of the program's script, students can highlight key concepts and challenging words as they listen to the program.

Have students visit StarDate Online or Universo Online as an enrichment activity. They can search the web site for answers to their astronomy questions or read the daily Frequently-Asked Question.