

STAR GAZERS

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“Finding the North Star”

JAMES: Welcome to Star Gazers. I'm James Albury, director of the Kika Silva Pla Planetarium in Gainesville, Florida.

DEAN: And I'm Dean Regas, astronomer from the Cincinnati Observatory, and we're here to help you find your way around the sky.

JAMES: If someone asked you right now to name the brightest star we can see in the sky what would you say?

DEAN: The Sun!

JAMES: That's true. You're going to be technical today, aren't you? Buuuuut... what about the brightest star you can see in the nighttime sky?

DEAN: If you're thinking of Sirius out there folks, you're right. But if you said the North Star... you're not so right. But don't feel bad if you said the North Star, because most people believe that the North Star is the brightest star, when in fact there are about 50 other stars visible to the naked eye which are brighter. So why do so many people think the North Star is the brightest star?

JAMES: Well, one reason might be that so many people have heard so much about the North Star that they assume it must be the brightest, when in fact it is really the most important star, at least as far as sailing the seas, flying a plane or traveling from place to place. Let's show you.

(STOP DROP)

JAMES: O.K., we've got our skies set up so that we're facing due north any night this week around 9:30 p.m.,

where you should easily be able to find the Big Dipper.

Those 4 stars that make its cup and the 3 stars that make its handle are so distinct in the spring sky.

DEAN: ...And if you want to find the North Star for yourself, all you have to do is use the two stars at the end of the cup, which are appropriately called, the pointer stars. All the boy scouts and girl scouts in the audience know this trick already, but when you shoot an arrow through

them and continue that line down and to the left the pointer stars will always point you to the North Star.

JAMES: Now once you've found it, you'll notice the North Star is about the same brightness as the pointer stars. So since the North Star doesn't stand out,

why is it so important?

(STOP) In Space

JAMES: Well I'll give you a clue: the North Star is also called Polaris because it is the closest bright star to the north celestial pole.

DEAN: So what? (you may be asking)

JAMES: Welllll, this simply means that if we could stand at the north pole, the North Star, Polaris, would be directly overhead, which further means that it is directly above the Earth's axis.

DEAN: Now if you think of the Earth's axis as a huge nail we could insert it at the south pole and it would go all the way through the Earth and come out the north pole and extend out into space; that nail, the Earth's axis, would point to the North Star.

JAMES: So what? (you may be asking)

DEAN: Wellllll, This also means that as the Earth turns on its axis, all the stars in the heavens would seem to move... except one...The star directly above the Earth's axis, Polaris the North Star.

That's why Polaris, the North Star is so important.

(STOP) (In Space)

JAMES: You see, Polaris is the only star which remains stationary in the heavens while all the other stars slowly circle around it. It is always due north, so before the invention of the compass, this star was extremely important to navigators and explorers to determine direction.

DEAN: In fact, if you're lost at night and don't know which direction you're headed, simply find the Big Dipper, then use the pointer stars to find the North Star and for as long as you live, the North Star will always be due north. And if it's not, you're either on a different planet, like Mars... whose North Star is Deneb, the tail of Cygnus the Swan....

JAMES: Or you could be on Earth, but in a different century. You see, Polaris won't always be our North Star.

The Earth's axis slowly wobbles in a motion we call precession. This slow wobble takes about 26,000 years to complete, moving 1 degree every 72 years. So, 3000 years ago, Polaris wasn't considered the pole star. And in 14,000 years, the bright star Vega, in Lyra the Harp, will be our pole star.

DEAN: Hmm... I guess in 14,000 years Polaris won't be the North Star and will have to change its name.

Until then...

BOTH: Keep looking up!
