“The Many Faces of the Big Dipper”

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.

JAMES: IF YOU'VE WATCHED OUR SHOW OVER THE YEARS, YOU KNOW THAT ONE OF OUR MOST FREQUENTLY REFERENCED STAR PATTERNS IS THE BIG DIPPER.

DEAN: THAT'S RIGHT, JAMES. BUT DID YOU KNOW THAT THIS ONE STAR PATTERN HAS BEEN CALLED DIFFERENT THINGS, DEPENDING ON WHERE AND WHEN IT WAS OBSERVED?

JAMES: WHAT ARE WE TALKING ABOUT? LET'S SHOW YOU!

(STOP)

JAMES: OK, WE HAVE OUR SKIES SET FOR ABOUT AN HOUR AFTER SUNSET, FACING NORTH. HIGH IN THE SKY YOU'LL SEE SEVEN BRIGHT STARS THAT FORM THE FAMILIAR PATTERN OF “THE BIG DIPPER”. THE FOUR STARS, DUBHE, MERAK, PHECDA AND MEGREZ MAKE THE BOWL.

DEAN: RIGHT NEXT TO THEM ARE THE THREE STARS ALIOTH, MIZAR AND ALKAID. THEY MARK THE HANDLE. THE BIG DIPPER HOWEVER IS NOT A CONSTELLATION. ASTRONOMERS REFER TO IT AS AN ASTERISM; WHICH IS A PATTERN OF BRIGHT STARS IN A MUCH LARGER CONSTELLATION.

JAMES: THE BIG DIPPER HAS HAD MANY ALIASES THROUGHOUT HISTORY. FOR EXAMPLE, THE ANCIENT MAYA SAW IT AS THE GIANT MACAW AND CELESTIAL TROUBLE MAKER, VUCUB-CAQUIX. ACCORDING TO LEGEND, HE WAS PLACED IN THE SKY BY THE HERO TWINS HUNAHPU AND XBALANQUE.
AFTER THE MACAW ARROGANTLY CLAIMED THAT HE WAS THE SUN AND THE MOON.


JAMES: IN GERMANY, IT’S CALLED “GROSER WAGEN” (GROßER WAGEN) OR “THE GREAT WAGON”, IN FINLAND IT’S CALLED THE OTAVA OR “SALMON NET”.

DEAN: IN IRELAND, IT’S A FARMER’S PLOW, IN NORTHERN ENGLAND, IT’S SOMETIMES CALLED “THE BUTCHER’S CLEAVER”, IN FRANCE, IT’S A CASSEROLE AND IN HOLLAND, IT’S A SAUCE PAN.

(STOP)

JAMES: MY FAVORITE REFERENCE TO THE BIG DIPPER COMES FROM AFRICAN-AMERICAN HISTORY. WHEN HARRIET TUBMAN WAS HELPING TO SLAVES TO ESCAPE, SHE USED A Technique CALLED THE UNDERGROUND RAILROAD. FAMILIES WOULD ESCAPE IN THE MIDDLE OF THE NIGHT AND TRAVEL TO SAFE HOUSES ON THEIR WAY NORTH; THEIR ULTIMATE DESTINATION BEING SOUTHERN CANADA, WHERE THERE WAS NO SLAVERY.

DEAN: SINCE PEOPLE OF THAT TIME DIDN’T HAVE GPS DEVICES LIKE WE DO TODAY, OR READILY AVAILABLE COMPASSES TO FIND GEO-MAGNETIC NORTH, THEY RELIED ON THE STARS TO HELP THEM NAVIGATE. BACK IN THE 19TH CENTURY, PEOPLE KNEW THE NIGHT SKY VERY WELL, BECAUSE THEY DIDN’T HAVE STREET LIGHTS TO WASH OUT THE STARS.

JAMES: THEREFORE, TO MAINTAIN THEIR NORTHWARD BEARINGS, THEY TOLD EACH OTHER TO LOOK FOR “THE DRINKING GOURD” AND KEEP IT IN FRONT OF YOU. THAT PIECE OF ADVICE LED MANY PEOPLE TO FREEDOM, AND THEY EVEN MADE A TRAVELING SONG CALLED “FOLLOW THE DRINKING GOURD” WHERE THE LYRICS OF THE SONG MENTIONED MANY OF THE LANDMARKS TRAVELERS WOULD ENCOUNTER ON THEIR WAY TO THE OHIO RIVER; THE DESIGNATED PICK-UP POINT.

(STOP)
DEAN: THE STARS OF THE BIG DIPPER ARE BETWEEN 75 TO 100 LIGHT YEARS FROM US, AND IF YOU HAVE REALLY GOOD EYESIGHT, YOU CAN SEE ONE OF THE MOST FAMOUS VISUAL BINARIES IN THE NIGHT SKY.

JAMES: RIGHT NEXT TO THE STAR MIZAR, THE STAR WHICH MARKS THE BEND IN THE BIG DIPPER’S HANDLE, YOU WILL SEE A SMALL, FAINT COMPANION STAR NAMED ALCOR. THESE TWO STARS ARE COLLECTIVELY CALLED “THE HORSE AND RIDER” AND WERE OFTEN USED AS A TEST OF A PERSON’S EYESIGHT.

DEAN: SPEAKING OF EYESIGHT, IF YOU HAVE A TELESCOPE HANDY, THERE ARE TWO SPECTACULAR SPIRAL GALAXIES VISIBLE NEAR THE STAR ALKAID; WHICH IS AT THE END OF THE DIPPER’S HANDLE. M101, THE PINWHEEL GALAXY IS JUST TO THE NORTH OF ALKAID AND M51. THE WHIRLPOOL GALAXY IS JUST TO ITS SOUTH.

(STOP)

JAMES: NO CONVERSATION ABOUT THE BIG DIPPER WOULD BE COMPLETE WITHOUT SHOWING HOW YOU CAN FIND ITS NEIGHBORING CONSTELLATIONS USING ITS STARS. FOR EXAMPLE, YOU CAN FIND POLARIS (THE NORTH STAR) BY DRAWING A STRAIGHT LINE FROM MERAK TO DUBHE AND CONTINUING THAT LINE APPROXIMATELY FIVE TIMES THE DISTANCE SPANNED BETWEEN MERAK AND DUBHE.

DEAN: YOU CAN FIND BOOTES THE HERDSMAN BY DRAWING AN ARC FROM ALIOTH, TO MIZAR AND THEN ALKAID. EVENTUALLY YOU WILL ENCOUNTER ARCTURUS, THE BRIGHTEST STAR IN BOOTES.

JAMES: YOU CAN FIND LEO THE LION BY DRAWING A LINE FROM PHECDA TO MEGREZ AND BEYOND.

DEAN: AND YOU CAN FIND THE GEMINI TWINS BY DRAWING A LINE FROM MEGREZ TO MERAK AND BEYOND.

JAMES: SO THERE YOU HAVE IT. THE DRINKING GOURD, CASSEROLE, WAGON, PLOW, CLEAVER, MACAW, DIPPER IN ALL ITS GLORY.
DEAN: AND IT’S WAITING IN THE SKY JUST FOR YOU, WHEN YOU...

BOTH: KEEP LOOKING UP!