

STAR GAZERS  
SG 1650 - 5M  
DECEMBER 12-18, 2016

"TOURING THE ROCKY PLANETS"

**JAMES:** HEY THERE STAR GAZERS. IM JAMES ALBURY, DIRECTOR OF THE KIKA SILVA PLA PLANETARIUM IN GAINESVILLE, FLORIDA.

**DEAN:** AND I'M DEAN REGAS, ASTRONOMER FOR THE CINCINNATI OBSERVATORY AND WE'RE HERE TO HELP YOU FIND YOUR WAY AROUND THE SKY. THE PLANETS MERCURY, VENUS, EARTH, AND MARS HAVE A FEW THINGS IN COMMON.

**JAMES:** THEY'RE ALL ROUND, ROCKY OBJECTS, ALSO CALLED TERRESTRIAL PLANETS, WHICH ARE THOUSANDS OF MILES IN DIAMETER.

**DEAN:** AND THEY ALL CIRCLE RELATIVELY CLOSE TO THE SUN. WELL, AT LEAST COMPARED TO THE OUTER PLANETS OF JUPITER, SATURN, URANUS, AND NEPTUNE.

**JAMES:** SINCE THEY'RE ROCKY, THAT MEANS YOU CAN ACTUALLY STAND ON THEM.

**DEAN:** YOU CAN, BUT SOME OF THEM YOU WOULDN'T WANT TO...

**JAMES:** TRUE. BUT EARLY THIS WEEK YOU HAVE THE BEST CHANCE OF SEEING THREE OF THE FOUR TERRESTRIAL PLANETS IN THE SKY.

**DEAN:** LET'S SHOW YOU!

----(STOP & DROP)

**DEAN:** OKAY, WE HAVE OUR SKY SET TO DECEMBER 15 AT ABOUT 5:45PM JUST AFTER SUNSET. TIMING IS KEY TO SEE THE PLANET CLOSEST TO THE SUN. DO YOU SEE IT OVER THERE IN THE SOUTHWEST?

**JAMES:** LOW ABOVE THE HORIZON, YOU MIGHT, JUST MIGHT BE ABLE TO MAKE OUT THE PLANET MERCURY. IT NEVER STRAYS FAR FROM THE SUN AND OFTEN SHINES WITH A PINKISH HUE.

**DEAN:** HIGHER UP IN THE SOUTHWEST IS A MUCH BRIGHTER PLANET. IN FACT IT IS THE BRIGHTEST PLANET YOU CAN SEE FROM EARTH (OTHER THAN THE EARTH).

**JAMES:** THAT'S VENUS AND YOUVE PROBABLY BEEN SEEING HER EVERY NIGHT AFTER SUNSET FOR THE PAST FEW MONTHS. AND YOU'LL STILL HAVE A FEW MORE MONTHS TO BASK IN VENUS' DAZZLING GLOW BEFORE SHE HEADS OUT OF THE EVENING SKY LATER IN 2017.

**DEAN:** FINALLY EVEN HIGHER IN THE SKY AND FARTHER TO THE SOUTH, YOU CAN FIND THE RED PLANET MARS. AT 5:45, MARS MIGHT BE TOUGH TO SPOT BUT AS WE MOVE TOWARD 6PM AND 6:15PM, HE WILL POP INTO VIEW AS MERCURY SETS.

---(STOP) IN SPACE - LOOKING AT THE INNER SOLAR SYSTEM

**JAMES:** FROM ABOVE THE SOLAR SYSTEM, WE CAN LOOK AT OUR INNER PLANETS, MERCURY, VENUS, EARTH, AND MARS AND SEE HOW THEY REVOLVE AROUND THE SUN.

**DEAN:** MERCURY IS THE CLOSEST TO THE SUN AND MOVES THE FASTEST. VENUS IS SECOND, EARTH IS THIRD, AND MARS IS FOURTH.

**JAMES:** THE DISTANCE FROM THE SUN DETERMINES HOW FAST A PLANET WILL MOVE AND HOW LONG IT TAKES TO MAKE ONE TRIP AROUND THE SUN. THAT'S ITS YEAR.

**DEAN:** A YEAR ON EARTH IS ABOUT 365 DAYS LONG WHILE A YEAR ON MERCURY IS ONLY 88 DAYS. JAMES WOULD BE OVER 200 YEARS OLD ON MERCURY!

**JAMES:** WELL YOU YOUNG WHIPPER-SNAPPER, VENUS TAKES 225 DAYS TO CIRCLE THE SUN AND A YEAR ON MARS IS 687 DAYS. THAT MEANS DEAN WOULD BE ONLY 22 YEARS OLD ON MARS.

**DEAN:** I'LL ACCEPT THAT...

----(STOP) FLYING ABOVE MERCURY

**JAMES:** OUR BEST PICTURES OF MERCURY COME FROM THE MESSENGER SPACECRAFT WHICH MAPPED ALMOST THE ENTIRE SURFACE.

**DEAN:** WHAT WE SEE ON MERCURY IS A GRAY, DUSTY WORLD SCARRED BY CRATERS, CRATERS, AND MORE CRATERS. IN FACT MERCURY LOOKS A LOT LIKE OUR MOON, SHOWING THE IMPACTS OF ANCIENT COLLISIONS WITH METEORIODS AND COMETS.

**JAMES:** NOW LET ME GIVE YOU A TIP. YOU WOULD NOT WANT TO VISIT THE SURFACE OF VENUS.

**DEAN:** NO WAY. IT IS HOT. LIKE 900 DEGREES FAHRENHEIT, HOT.

**JAMES:** VENUS' THICK ATMOSPHERE TRAPS IN SO MUCH HEAT THAT THE SURFACE BOILS. AND THE ATMOSPHERE IS HEAVY. THE AIR PRESSURE WOULD ACTUALLY SQUISH YOU FLAT.

**DEAN:** AND THEN IF IT RAINS ON VENUS, WATCH OUT. IT DOESN'T RAIN WATER. IT RAINS SULFURIC ACID. SO YOU'D BE A ROASTED, SQUISHED, ACIDY, PILE OF GOOP ON VENUS.

----(STOP) ON MARS (GRAPHICS FROM 1624)

**JAMES:** NOW WE'RE ON MARS AND MOST OF IT LOOKS LIKE A DRY, ORANGE DESERT. YOU CAN ALSO FIND TALL MOUNTAINS LIKE OLYMPUS MONS, WHICH IS THREE TIMES TALLER THAN ANY MOUNTAIN ON EARTH, AND DEEP VALLEYS LIKE VALLES MARINERIS WHICH IS 2500 MILES LONG AND FIVE TIMES DEEPER THAN THE GRAND CANYON.

**DEAN:** PLUS THERE'S TWO ROVERS STILL ROLLING ON MARS. LOOK, THERE'S THE CURIOSITY ROVER CLIMBING MT. SHARP. HI CURIOSITY! IT'S US. JAMES AND DEAN! WE MAY STILL BE DECADES AWAY FROM SENDING HUMANS TO MARS, BUT ONE CAN ALWAYS DREAM.

---(STOP) BACK ON THE HORIZON

**DEAN:** SO GET OUTSIDE THIS WEEK JUST AFTER SUNSET AND LOOK QUICKLY FOR MERCURY LOW IN THE SOUTHWEST.

**JAMES:** AND TAKE YOUR TIME TO SEE VENUS AND MARS HIGHER UP.

**DEAN:** AND EVEN WITH THE ROCKY EARTH BELOW YOUR FEET, YOU CAN ALWAYS STILL REACH FOR THE PLANETS AS YOU...

**BOTH:** KEEP LOOKING UP!