



CAPE FEAR *Skies*

A MONTHLY NEWSLETTER
OF THE
CAPE FEAR ASTRONOMY CLUB

VOLUME 2, No. 7

JULY 1987

MEMBERS:

WELCOME TO SUMMER!!! BY THE WAY, THIS MONTH'S ISSUE OF CAPE FEAR SKIES MARKS THE ONE YEAR ANNIVERSARY OF THE NEWSLETTER. I HOPE THAT ALL OF YOU HAVE ENJOYED READING THE LETTER AND HAVE FOUND IT USEFUL.

OUR NEXT MEETING WILL BE ON JULY 5th, AT 7:30 PM AT MORTON HALL.

WE WILL HAVE ON VIEW THE NEW CLUB TELESCOPE. WE PURCHASED THIS SCOPE FROM AN INDIVIDUAL OUTSIDE THE CLUB FOR \$600.00. WE WOULD LIKE TO THANK ALL THE MEMBERS WHO MADE CONTRIBUTIONS TO THE CLUB FOR THE PURCHASE OF THIS SCOPE. HERE IS A DESCRIPTION. IT'S AN OPTICAL CRAFTSMAN TELESCOPE. 8" NEWTONIAN WITH A MOTOR DRIVE. ALAN SAID THAT SOME MEMBERS HAVE CHECKED THE MOTOR DRIVE AND IT WORKS WELL. THIS SCOPE MAY BE USED BY ANY CLUB MEMBER. DETAILS AT THE MEETING.

WE NOW HAVE BUMPER STICKERS AVAILABLE. THEY ARE \$1.00 EACH. THESE STICKERS CAME FROM THE ASTRONOMICAL LEAGUE OF THE PACIFIC, AND THERE ARE 10 DIFFERENT LOGOS TO CHOOSE FROM. THEY WILL BE AVAILABLE AT THE MEETING.

WE WILL HAVE A SHORT 18 MINUTE FILM ENTITLED "THE UNIVERSE BEYOND THE SOLAR SYSTEM" AT THIS MEETING.. ALSO, CONRAD POPE, ONE OF OUR NEW MEMBERS, WILL HAVE A SLIDE SHOW PRESENTING SOME SLIDES FROM NASA.

ALAN HAS REPORTED THAT THE SOUTHEAST REGIONAL MEETING IN ATLANTA WAS A GREAT SUCCESS AND HE WILL PASS ALONG SOME OF THE INFORMATION HE PICKED UP TO US AT THE MEETING.

WE ARE STILL TAKING ORDERS FOR CLUB T-SHIRTS. ALL COLORS ARE AVAILABLE. THEY ARE \$8.00 FOR SHIRTS WITH POCKETS AND \$7.00 FOR SHIRTS WITHOUT POCKETS. PLEASE SEE PAUL AT THE MEETING TO ORDER A SHIRT. THE FIRST ORDER WE PLACED SHOULD BE READY WITHIN A WEEK OR TWO. I'VE SEEN THE COLOR LOGO AND IT IS GREAT.

WE WILL TRY TO DO SOME OBSERVING AFTER THE MEETING WITH THE NEW SCOPE, PROVIDED IT DOESN'T CLOUD UP.

THE JULY SKY CALENDAR

- 4th HAPPY 4th OF JULY.
EARTH AT APHELION.
MERCURY AT INFERIOR CONJUNCTION
FIRST QUARTER MOON 4:34 AM EDT
- 5th MOON PASSES 0.6 DEGREES NORTH OF SPICA
- 8th CAPRICORNID METEORS
MOON PASSES 0.1 DEGREES NORTH OF ANTARES
- 9th MOON 6 DEGREES NORTH OF SATURN
MOON 5 DEGREES SOUTH OF URANUS
- 10th JUPITER AT PERIHELION
MOON 6 DEGREES SOUTH OF NEPTUNE
- 11th FULL MOON 11:33 PM EDT MOON AT PERIGEE
- 17th LAST QUARTER MOON 4:17 PM EDT
- 20th ON THIS DAY 1969, THE FIRST MEN SET FOOT ON THE MOON
NEIL ARMSTRONG AND BUZZ ALDRIN.
- 25th MOON AT APOGEE
NEW MOON 4:37 PM EDT
- 29th DELTA AQUARID METEORS.

ON THE 8th, CHECK OUT THE CAPRICORNID METEORS. AVERAGE HOURLY RATE IS BETWEEN 5 AND 30. MOST OFTEN YELLOW, WITH MORE THAN AVERAGE BRIGHT FIREBALLS. FOR LATITUDE 40 DEGREES NORTH, THE RADIANT RISES AT DUSK AND SETS AT DAWN. GENERAL RADIANT IS 20H 30M

ON THE 29th WE HAVE THE DELTA AQUARID METEORS. THIS IS A DIFFUSE STREAM SPREAD OUT BETWEEN THE 15th OF JULY AND THE 29th OF AUGUST. HOURLY RATE AVERAGES BETWEEN 10 AND 35. GENERAL RADIANT IS 22H 30M.

ORIGINS OF THE CONSTELLATIONS

PISCIS AUSTRINUS THE SOUTHERN FISH - THIS CONSTELLATION IS LINKED TO THE STORY OF THE MONSTER TYPHON. AFTER ZEUS OVERTHREW THE TITANS, SONS OF GAEA, GAEA GAVE BIRTH TO ANOTHER SON, TYPHON. SHE INCITED TYPHON TO ATTACK THE OLYMPIANS. IN ORDER TO EVADE THE ATTACKING TYPHON, THE RESIDENTS OF OLYMPUS ASSUMED FORMS OF ANIMALS. VENUS ASSUMED THE FORM OF A FISH AND JUMPED INTO THE OCEAN. SHE WAS SPARED BECAUSE OF HER DESGUISE AND PLACED THE FISH IN THE HEAVENS AS A REMINDER OF HER ESCAPE.

SAGITTA THE ARROW - THIS HAS BEEN ASSOCIATED WITH SEVERAL DIFFERENT AROWS, INCLUDING THE ONE THAT APOLLO USED TO SLAY THE THREE ONE-EYED GIANTS, THE CYCLOPS.

SERPENS THE SERPENT - THERE IS LITTLE KNOWN ABOUT THIS SNAKE OTHER THAN THAT IT IS ASSOCIATED WITH OPHIUCHUS, THE SERPENT BEARER. THIS COULD BE THE SERPENT THAT APPEARS ON THE STAFF OF PHYSICIANS.

TRIANGULUM THE TRIANGLE - THIS CONSTELLATION HAS BEEN ASSOCIATED WITH MANY GEOGRAPHICAL LOCATIONS. MOST NOTABLY GREECE, SINCE THE DELTA TRIANGLE IS ONE OF THE ORIGINAL GREEK LETTERS. IT IS ALSO SAID TO REPRESENT THE DELTA AREA OF THE NILE RIVER IN EGYPT, AND THE ISLAND OF SICILY.

ASTRONOMICAL GLOSSARY

GALAXY - A GIANT COLLECTION OF STARS, GAS, AND DUST. OUR GALAXY CONTAINS 1 TRILLION TIME THE MASS OF OUR SUN.

METEORITE - THE PART OF A METEOROID THAT SURVIVES IT'S PASSAGE THROUGH THE EARTH'S ATMOSPHERE.

SUPERNOVA - THE EXPLOSION AND DEVASTATION OF A VERY MASSIVE STAR

HUBBLE'S LAW - THE RELATIONSHIP BETEWWN THE VELOCITY AND THE DISTANCE OF GALAXIES AND OTHER DISTANT OBJECTS; IT SHOWS THAT THE UNIVERSE IS EXPANDING.

ABBERATION OF STARLIGHT - THE TINY APPARENT DISPLACEMENT OF STARS RESULTING FROMM THE MOTION OF THE EARTH THROUGH SPACE.

ENCKE'S DIVISION - A THIN DIVISION IN THE A-RING OF SATURN

LIBRATION - THE TURNING OF THE VISIBLE FACE OF THE MOON, WHICH ALLOWS US TO SEE DIFFERENT AMOUNTS OF THE LUNAR SURFACE AROUND THE LIMB.

EDITOR'S NOTE RECOMMENDED READING.....

THIS MONTH'S ISSUE OF DISCOVER MAGAZINE HAS 2 EXCELLENT ARTICLES PURTAINING TO ASTRONOMY. ONE IS A THEORY ABOUT THE END OF THE UNIVERSE AND THE OTHER IS AN EXCLUSIVE INTERVIEW WITH IAN SHELTON. FOR THOSE OF YOU WHO DON'T KNOW, IAN SHELTON IS THE DOCUMENTED DISCOVERER OF "SUPERNOVA SHELTON" THIS YEAR. CHECK IT OUT. BOTH OF THE ARTICLES ARE REALLY GREAT READING.

SPECIAL REPORT

"THE FIRST NEWS FROM THE SUPERNOVA WAS THE LAST TO BE READ"

FROM DISCOVER MAGAZINE, JULY 1987

IT SEEMS THAT AS MANY AS 18 HOUR BEFORE THE LIGHT OF THE SUPERNOVA HIT IAN SHELTON'S TELESCOPE, THE EARTH WAS BEING BOMBARDED BY BILLIONS OF PHANTOM PARTICLES CALLED NEUTRINOS. NEUTRINOS ARE ATOMIC PARTICLES ASSOCIATED WITH THE RADIOACTIVE EMISSION OF BETA RAYS. THEY CARRY NO ELECTRIC CHARGE AND HAVE A MASS COMPARABLE TO THAT OF AN ELECTRON. THEY ARE VERY VERY ELUSIVE CREATURES. THERE ARE, SCATTERED ABOUT THE WORLD, ONLY A FEW NEUTRINO COLLECTORS. ONE OF THESE BIZARRE COLLECTORS IS LOCATED 2,000 FEET UNDERGROUND IN AN ABANDONED SALT MINE NEAR CLEVELAND OHIO. ACCORDING TO THE ARTICLE BY SHAWNA VOGEL, ON FEB 23rd AT 7:35:41.37, THE DAY BEFORE THE SIGHTING OF THE SUPERNOVA, THIS COLLECTOR RECORDED EIGHT NEUTRINO "EVENTS". THESE SUPERNOVA NEUTRINOS WERE THE FIRST EVER SEEN FROM A SOURCE OUTSIDE OUR SOLAR SYSTEM, BUT THEY HAD BEEN THEORIZED AS TO EXIST BY SCIENTISTS.

THIS IS HOW THE DETECTOR-COLLECTOR WORKS. NEUTRINOS AND ANITNEUTRINO PARTICLES STREAM INTO THE WATER TANK OF THE COLLECTOR. OCCASIONALLY, A NEUTRINO KNOCKS AN ELECTRON LOOSE FROM AN ATOM IN A WATER MOLECULE, CREATING A NEUTRON AND A POSITRON. THESE TWO PARTICLES FLY OFF WITH SUCH ENERGY THAT THEY GENERATE WHAT AMOUNTS TO A SONIC BOOM OF LIGHT. THE LIGHT IS DETECTED BY PHOTOMULTIPLIER TUBES AND RECORDED BY THE INSTRUMENTS IN THE MACHINE.

TWO OTHER RECORDED EVENTS IN DIFFERENT PARTS OF THE WORLD WERE ALSO OBSERVED. ONE IN KAMIOKA, JAPAN AND TH OTHER AT THE MONT BLANC COLLECTOR IN THE FRENCH-ITALIAN ALPS. THE LATTER WAS SUBSEQUENTLY DISMISSED AS BACKGROUND NOISE WHEN IT WAS REVEALED TO HAVE OCCURRED 4 HOUR BEFORE THAT OF THE CLEVELAND "EVENT".

"THESE NEUTRINOS PINPOINTED THE START OF THE SUPERNOVA'S EXPLOSION REVEALED THAT ITS CORE HAD CONDENSED INTO A NEUTRON STAR, CONFIRMED MANY ELEMENTS OF SUPERNOVA THEORY AND TOPPLED AT LEAST ONE THEORY FOR THE ULTIMATE FATE OF THE UNIVERSE."

"NEUTRINOS ARE SO INFORMATIVE BECAUSE THEY ARE SO ELUSIVE. FORMED BY HIGH-ENERGY INTERACTIONS BETWEEN ATOMIC PARTICLES, THEY'RE INVISIBLE, PROBABLY MASSLESS, AND SO RELUCTANT TO REACT WITH MATTER THAT THEY ZIP THROUGH PLANETS WITHOUT STRIKING ANYTHING. THIS MAKES THEM USEFUL FOR REVEALING THE SECRETS OF THE SUPERNOVA, SINCE THEY CAN ESCAPE FROM THE COLLAPSING CORE THROUGH THE SURROUNDING CLOUD THAT BLOCKS OTHER FORMS OF RADIATION."

THESE INVISIBLE, ELUSIVE CREATURES LEFT SUPERNOVA SHELTON ABOUT 170,000 YEARS AGO. A COMPARATIVELY SHORT DISTANCE CONSIDERING THAT OTHER SUPERNOVAE HAVE BEEN CONSIDERABLY FURTHER AWAY.

EXCERPTS FROM DISCOVER MAGAZINE. ARTICLE BY SHAWNA VOGEL AND QUOTATIONS FROM MAURICE GOLDBAR, PHYSICIST AT BROOKHAVEN (N.Y.) NATIONAL LABORATORY. DISCOVER MAGAZINE JULY 1987