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Editors: Frank McCullough; 22803 Saxony; East Detroit; 775-3536.
 Kenneth Wilson; 11157 Granada; Sterling Heights; 268-9337

STAFF: Diane Bargiel, Chris Edsall, Mary Riley, Walter Roudebush

Cover by Frank McCullough

The W.A.S. holds correspondence (sometimes intermittently) with the following organizations. Others are welcome to join this list:

Detroit Astronomical Society
Detroit Observational and Astrographic Association
Jackson Astronomical Society
Kalamazoo Astronomical Society
Astronomical League

NEWS ITEMS

By
Ken Wilson

Major Solar Eruption

On December 13, 1971 the OSO7 (Orbiting Solar Observatory) detected a Class 2 solar flare erupting on the far side of the sun. The flare emitted clouds 20 to 40 times the diameter of the earth, of electrons and protons at speeds of 600 miles per second. If this flare had been directed toward earth in full concentration, it conceivably could have slowed the earth's rotation, according to Dr. Richard Tousey (chief of the Naval Research Laboratory rocket spectroscopy branch).

"Converted to its electrical equivalent, it (the flare) would supply the electrical needs of the entire United States at its current rate of consumption for more than a million years. This energy could also be compared to the explosive effect of 100 million thermonuclear bombs." Dr. Tousey said.

As this flare is of the same sort that causes the Aurora Borealis, one can imagine the Aurora display that the earth missed.

New "Quasi-moon"

A small "Quasi-moon" has been discovered linked to the earth and moon in a three body team of celestial objects orbiting the sun. The new object is only one or two miles in diameter and was discovered by Dr. Samuel Herrick of the University of California at Los Angeles. Calculations show that this object, now called Toro, has been linked with the earth for at least 100 years.

Mariner 9 Photos

Recent pictures from Mariner 9, unlike any obtained before, show the Phoenix Lacus area (a plateau $3\frac{1}{2}$ miles above the mean elevation of Mars and just south of the Martian equator) to be crisscrossed by mile and a half wide faults. There are relatively few craters marring this area, indicating that it is relatively young and may be covered by volcanic deposits subsequently faulted. As the Martian dust storm that had been obscuring the surface has now subsided, quality pictures such as the above mentioned are being sent back.

New Radio Telescope

The largest movable radio telescope in the world recently went into operating in the Eifel Mountains near Bonn. The entire instrument weighs 3,200 tons. Its steerable reflector weighs 1,600 tons. The new instrument cost 39 million.

An Old Astronomer's Drinking Song

The Noble Tycho placed the stars,
Each in its due location;
He lost his nose by spite of Mars,
But that was no privation;
Had he but lost his mouth, I grant
He would have felt dismay, sir,
Bless you! He knew what he should want
To drink his bottle a day, sir!

January Messier Contest

On the evening of January 28th, two days before full moon, there will be a MESSIER CONTEST held by the Warren Astronomical Society for anyone interested in participating. Same rules apply as before and again teams of two are allowed.

Winter is a time of open clusters and a few diffused nebula. This is why a contest will be held at this date. These objects are very easy on a good dark night and more challenging on a night with a bright moon. This will also give the observer more time to study and practice a week after the objects are published (Please Walt, at least know what you're going to look for ahead of time, you may be first instead of second this time.).

The Kalamazoo Astronomical Society will most likely be sending representatives to compete against our members, so sharpen up guys and girls. Hopefully D.A.S. members will participate also.

PAST WINNERS:

	1. Ken Wilson	1. Ken Wilson
	2. Walt Roudebush	2. Walt Roudebush
SUMMER	3. Rick Mousseau	FALL 3. Tim Skonieczny

NO scopes under f.7

Entree Fee 60¢ Girls 30¢ with a one minute handicap.

MESSIER OBJECTS

<u>Object</u>	<u>Constellation</u>	<u>Magnitude</u>	<u>Type</u>
M-50	Monoceros	6th	open cluster
M-46	Puppis	6th	open cluster
M-47	Puppis	5th	open cluster
M-67	Cancer	6th	open cluster
M-37	Auriga	6th	open cluster
M-79	Lepus	8th	globular cluster
M-1	Taurus	8th	diffused nebula

Good Luck EVERYONE!

Salute of the Month

This month the salute goes to two fine people in the astronomy field today. Mike Potter is the first person recognized this month.

Mike belongs to the K.A.S. (Kalamazoo Astronomical Society) and has been a perfect host on two of our visits their place and has always been friendly and is the kind of person who makes astronomy to be a fun thing. He would like to ***-missing text-*** of astronomy clubs in the Astronomical League.

He is President of The K.A.S. and is a ***-missing text-*** to visit other clubs. He is also a ***-missing text-*** and Messier observer.

We're not just saluting the person, but also the devoted amateur astronomer that he is.

We now salute Walter Roudebush for the amateur that is ***-missing text-*** the quiet guy who will always drive or do a favor if asked of him. Also he has poems under the Poets' Corner, which have appeared in our last two issues.

We would also like to salute him for his driving all the way to Kalamazoo where he nearly wiped himself and his car out on a turn-off on the expressway.

We're glad you're still with us, Walt!

Club Notes

SOLAR ECLIPSE

Preparation for the 1972 Solar Eclipse will start February 2nd at the Messier Club meeting. If interested, call ***-missing text-*** and ask for Frank for the time and meeting place. An expedition is being planned, so let's hear from you.

LUNAR ECLIPSE

Early morning observing will be done for the Lunar Eclipse, January 30th at Camp Rotary. Lodging for the morning ***-missing text-*** bring space heaters if they are available.

An Interesting Conversation . . .

*Taken from the "Bob Hope Special"

Bob Hope — Why did you golf on the moon?

Alan Shepard — Because there were no bowling alleys open.

Bob — Do you believe there is life on other planets?

Shepard — Of course—I never miss "Star Trek".

Bob — Do you think you will see some life on the moon on your next journey?

Shepard — I was hoping to see some on this one.

The Astronomical League

By

Kenneth Wilson

After a lost check and a long wait, the Warren Astronomical Society is now an official member of the Astronomical League. There are many advantages of belonging to the League.

The Astronomical League is a national organization of Amateur Astronomical Societies and members at large. Its purposes are to promote the science of astronomy; to encourage and coordinate activities of amateur astronomical societies; to foster observational and computational work, and craftsmanship in the various fields of astronomy; and, to correlate amateur activities with professional research. The league is composed of regions each consisting of several states. The lower peninsula of Michigan belongs to the Great Lakes Region, along with Ohio, Indiana, and Kentucky (?!).

Each region holds a convention at least every other year. The Great Lakes Region held its last convention in August of 1971, at Oakland University. The League holds a convention every year, often in conjunction with another national astronomical organization. These conventions allow amateurs to exchange ideas and information. Field trips to astronomically related points of interest are often made. These conventions are very informative and enjoyable for all.

Members of clubs belonging to the League also receive its Quarterly publication, the "Reflector". This periodical keeps members informed on amateur activities across the nation and includes many poems and articles of astronomical interest. The W.A.S. is presently engaged in procuring the "Reflector" for its members. It will probably be distributed in bulk at the general meetings along with the W.A.S.P.

The League also publishes a series of booklets; "The Astronomical League", "Organizing an Amateur Astronomical Society", and "Preparing and Presenting a Paper" are available upon request from the League. The "Manual for Junior Activities" costs 10¢. And two Observe Manuals: "Observe, A Guide to the Messier Objects" and "Observe, and Understand the Stars" are also available \$1.00 each. Send your requests to: Wilma A. Cherup; 4 Klopfer St.; Pittsburg, Pa. 15209.

One of the best services is the 10% discount on astronomical books. All one has to do is send the name of the book, author, publisher, list price name of your society (Warren Astronomical Society), your name and address, and your check for the list price, less 10%, to the address below. Make checks payable to: Astronomical League Book Service.

Leonard B. Abbey, Book Service Chairman
3204 LaVista Road
Decatur, Georgia 30033

From the above one can see the many advantages of our belonging to the League. We can only hope that our association with the League will be a long and mutually beneficial one.

"THE OLD TELESCOPE"

By

Sir John Herschel

(EDITOR'S NOTE: This little piece may have been more appropriate in last month's issue but, as this is still January, I will present it now.)

To be sung on New Year's Eve 1839-40 by Sir John Herschel, his wife, their children, and their governess in his father's (William Herschel) old tube (telescope).

In the old telescope's tube we sit,
and the shades of the past around us flit.
His requiem sing we with shout and din,
while the old year goes out, and the new comes in.

Chorus

Merrily, merrily, let us all sing
and make the old telescope rattle and ring.

Full fifty years did he laugh at the storm,
and the blast could not shake his majestic form.
Now prone he lies, where he once stood high
and searched the deep heaven with his broad bright eye.

There are wonders no living sight has seen,
which within this hollow have pictured been,
Which mortal record can never recall
and are known to him only, who made them all.

Here watched our father the wintry night,
and his gaze has been fed with pre-Adamite light,
His labors were lightened by sisterly love,
and inted they strained their visions above.

He has stretched him quietly down at length,
to bask in the starlight his giant strength,
And time shall have a tough morsel find,
for his steel-devouring teeth to grind.

He will grind it at last, as grind it he must,
and its brass, and its iron shall be clay and rust.
But scarceless ages shall roll away,
and nurture its fame in its form's decay.

A new year dawns and the old year's past;
God send it a happy one like the last
(A little more sun and a little less rain,
to save us from cough and rheumatic pain).

God grant that its end this group may find
in love and in harmony fondly joined

And that some of us fifty years hence once more
may make the old telescope's echoes and & roar.

Chorus

Merrily, merrily, let us all sing
and make the old telescope rattle and ring.

(Submitted by: Kenneth Wilson)

Night

Swiftly walk o'er the western wave,
 Spirit of Night!
Out where the misty eastern cave, —
Where, all the long and lone daylight,
Thou wovest dreams of joy and fear
Which make thee terrible and dear, —
 Swift be thy flight!

Wrap thy form o'er the western wave,
 Star-inwrought!
Blind with thine hair the eyes of day;
Kiss her until she wearied out.
Then wander o'er city and sea and land,
Touching all with thine opiate wand—
 Come, long-sought

When I arose and saw the dawn
 I sigh'd for thee;
When light rode high, and the dew was gone,
And noon lay heavy on flower and tree,
And the weary Day turn'd to her rest,
Lingering like an unloved guest,
 I sigh'd for thee.

Thy brother Death came, and cried,
 'Wouldst thou me?'
Thy sweet child Sleep, the filmy eyed,
Murmur'd like a noontide bee,
'Shall I nestle near thy side?
Wouldst thou me?' — And I replied,
 'No, not thee!'

Death will come when thou art dead,
 Soon, too soon—
Sleep will come when thou art fled.
Of neither would I ask the boon
I ask of thee beloved Night—
Swift be thine approaching flight,
 Come soon, soon!

— Percy Bysshe Shelley

In the Night

The night was growing old
 As he trudged through snow and sleet;
His nose was long and cold,
And his shoes were full of feet.

—Anonymous

The Poet's Corner

—Walter Roudebush

(The following has been given the dubious title
of Poem of the Month by the editor)

Poem of the Month

Mars, I really hate
 to see you leave,
You will return, I do believe
Behind the Sun
 you will go,
Getting warm,
 from head to toe.
In the Sun I try
 to find,
But I'll be damned
 if I'll go blind



Thank You,
by Henry Gibbous

'T is Midnight

'T is midnight, and the
 setting sun
Is slowly rising in
 the west;
The rapid rivers slowly
 run,
The frog is on his
 downing nest.
The pensive goat and
 sportive cow,
Hilarious, leap from
 bough to bough.

—Anonymous

The Observer's Library

By

Kenneth Wilson

"The Star Atlas-I"

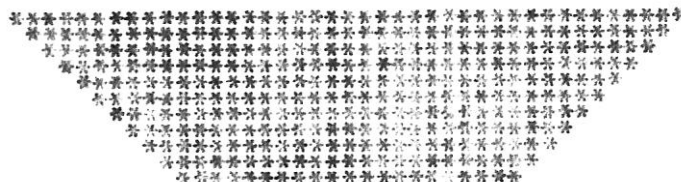
This article is the first of a series on different star charts available to the amateur astronomer. I will begin with one of the simplest: the Popular Star Atlas (epoch 1950; hardcover; \$2:50 from Sky Publishing Corporation 49-50-51 Bay State Road, Cambridge, Mass. 02138).

This atlas is actually an abbreviated version of Norton's by the same author. It contains 16 charts, covering the sky from pole to pole in the same manner as Norton's. The charts have white stars, to the fifth magnitude, on a dark background. Clusters, galaxies and nebulae visible with the eye, binoculars or a small telescope are also designated. The constellations of each map are described on the page before them. The prominent double stars, clusters, nebulae and galaxies are also listed and described on the pages before the charts.

On the back pages are: an index to the charted constellations (and their Latin genitives); hints on use and care of binoculars and small telescopes; a pronunciation guide to star and cluster names; and the Greek alphabet.

For the beginning observer just learning the constellations, who might have a small telescope or a pair of binoculars, this atlas is an excellent one. Its low cost and other features make it a good buy. However, the serious amateur with a moderate or large telescope will find it inadequate for his needs. It does not list all of the messier objects and only the most conspicuous of the NGC objects. Guide stars fainter than 5th magnitude and challenging test double stars are not listed. So if you are just getting into the fascinating world of amateur astronomy, this will be a good atlas for you. But if you are attempting to finish the NGC catalogue, don't count on this atlas.

I would be happy to hear the opinion of others on the star charts mentioned in this article and the ones to follow.



A METHOD OF FINDING MESSIER OBJECTS

By

Kenneth Wilson

Among the most satisfying pursuits of the amateur astronomer is the observation of deep sky objects. Some of the finest of these objects are found on the list compiled by the French comet hunter Charles Messier. I have found 91 of these objects and developed a method that I believe very efficient for finding them. This method may be applied to any faint deep sky object.

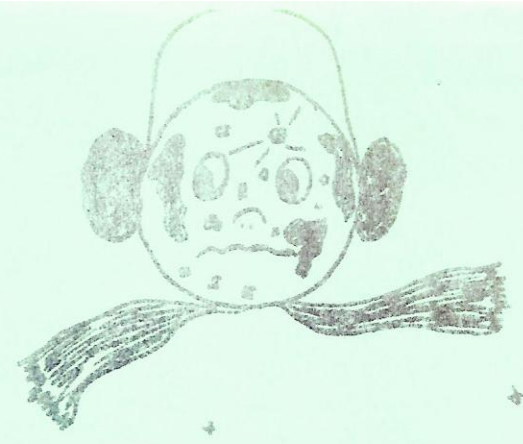
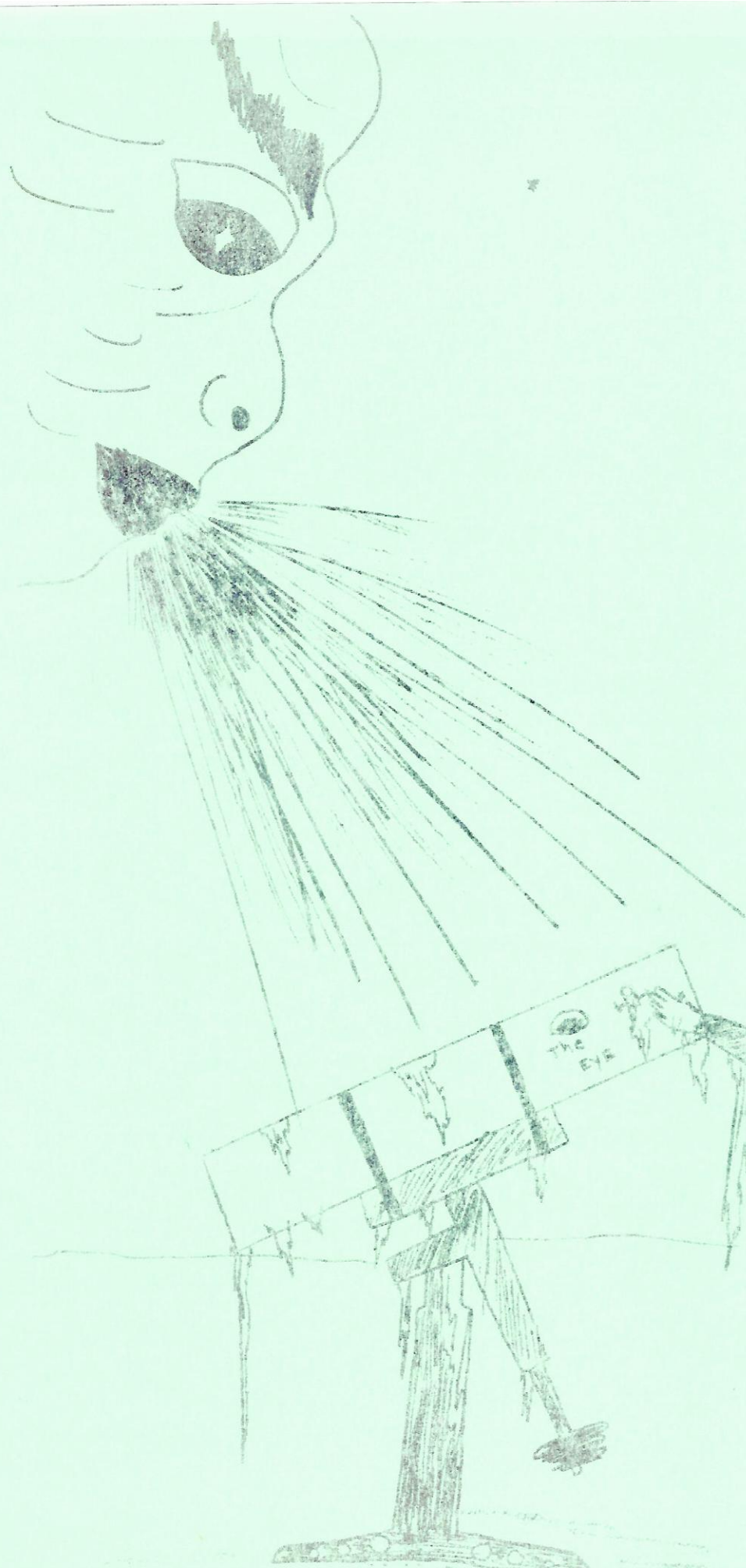
For dim objects, a moderate size telescope is an absolute requirement. Almost anything from a 3" on up will be useful. I use a 6" f8 reflector. The smaller f-ratio the wider the field of view of the telescope. And, the wider the field of view, the easier objects may be found; and the better, more extended objects may be seen. The finder scope of this instrument must be accurately aligned with the main instrument, or the observer will be lost. I have also found that the wider the field and objective of the finder, the better.

The next essential is a good star atlas. Norton's and the Skalnate Pleso are very good ones. I, personally, prefer the Skalnate for several reasons. The magnitude limit closely matches the practical limit of my 7x50 binoculars. And the field edition has white stars on a black background and cost only \$4.00. I also find that the symbols and numbers used in Norton's are confusing. It often lists objects by "HV" numbers rather than NGC or M numbers.

The other requirement for my method is a good pair of binoculars. Here again, the larger the objective, the fainter the objects observable. But objectives over 50mm and magnifications greater than 7x usually require support other than the observer's arms. This reduces the ability to sweep the sky quickly. A very useful device is a center focusing mechanism on the binoculars.

Now for the method itself. To begin with, the best nights are moonless and transparent. The air doesn't have to be steady, but it must be transparent. A good check of the transparency is the visibility of Ursa Minor. If all the stars of the Little Dipper are visible, the transparency is good. If only Polaris and the Guardians (the two outer stars of the bowl) are visible, transparency is poor.

Know the object you are seeking before you search for it. Study the area in which it is located on the atlas. Memorize simple geometric patterns of stars in the vicinity of the object. Then, take your binoculars and scan the area of the object; star hopping from one pattern of stars to another until you reach the location of the object. Familiarize yourself with the patterns leading from the bright, known naked-eye stars to your object. Then attempt to retrace this trail in the finder of the main telescope. When the crosshairs are at the proper location, examine the view through the main instrument with a low power (<60x) eyepiece. If the object is not there, slowly move the scope in a widening spiral. If this fails try again.



The
Cold Weather
Chamber



OBSERVATIONAL ASTRONOMY

by: Frank McCullough

(M-46)

Winter is a great time to observe if you can stand a little bit of cold. The skies are clear and crisp and the stars sparkle and gleam even from the suburbs of Detroit. To tell if you are going to have a good clear night--look south to find Sirius. Now look for the rest of the "dog" and if you see it you will be able to see the two objects, M-46 and M-47.

M-46 is an open cluster-in the constellation Puppis and is approximately 12° west and slightly north of the bright star, Sirius.

This object is beautiful, showing swarms of stars in tiny pin points of light gathered together in a semi-elongated shape. I saw no stars breaking away from the magnitude given to this object. Look for planetary nebula on the border of the cluster. (Norton's Atlas lists it as H VIII 38).

Co-ordinates are R.A. -- 7h 40m; Dec. -- $14^\circ 42'$.

Magnitude -- 6^{th} .

(M-47)

The next object is very close to M-46 and looked like a miniature Pleiades. It is very easy to see and will come to your finder looking very bright and resolved. Through the telescope it separates the stars so widely that you wonder if you have got the right object. Use this as your guide to find M-46.

Co-ordinates are R.A. -- 7h 34min; Dec. -- $14^\circ 22'$.

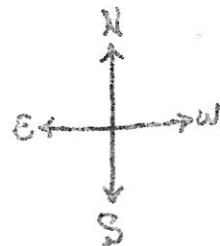
Magnitude -- 5^{th} .

Use Sirius and γ Canis Majoris as pointers to the two objects. The objects are approximately $2\frac{1}{2}x$ the separation of the two stars mentioned.

(Map on next page)

Observational Map

M-46
M-47

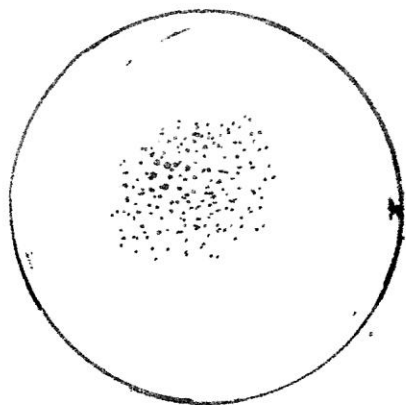


CANIS MAJOR

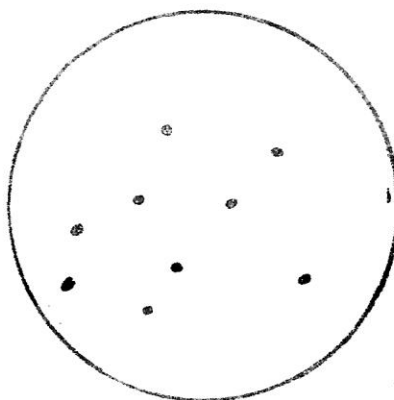
PUPPIS

6" Reflector at 70X

M-46



M-47



* maps taken from Kenton Atlas

Happenings- For Short Wave Listeners

Those who own short wave radios may be interested in a few stations located on your bands. This article may bring music to your ears or just a look at something from another country's point of view.

First of all, if you are not familiar with time signal stations, then two reliable stations to listen for accurate universal time are-WWV, Fort Collins, Colorado, 2.5, 5, 10, 20, 25Mhz, WWVH, Maui, Hawaii, 2.5, 5, 10, 15mhz, and CHU, Ottawa, Canada, 3.33, 7.335, 14.67Mhz.

Some stations are heard better at different parts of the day. Fort Collins is in most cases the station heard by Michiganders and for possible interest, CHU can be heard as far south as New Orleans, Louisiana.

For music lovers, a fairly good station to listen to is Hilversum, Holland in the Netherlands. Broadcast time is from early evening to 1:20 A.M. The music is generally requests from all over the world and there is a time when they dedicate twenty minutes or more to just a specific country's music, which can be very refreshing. Science news is broadcast and can be very entertaining for the amateur astronomer. The frequency is 9.7Mhz.

Voice of America is worth listening to at times for their news from one of the NASA representatives, who will answer questions from around the world on the space program.

Hopefully for people with radios, this article will be of some assistance.

Frank McCullough

THE W.A.S.P. UNCOVERS "THE GOOD OLD DAYS"

While looking back through some of the "old" articles of the W.A.S.P., I came across some articles worth sharing to the current members of today. Hold on to your hats... 'cause here we go!

Club News (March 1969) (1st issue ever published)

Projects:

Spectroheliometer—The people involved met February 19th, to determine their course of action. Diane Bargiel was elected treasurer to handle the group's \$27.00. Frank McCullough and Dave Atnip volunteered to build coelostat; Gene Francis is in charge of the optical work, and Timothy LeBracque, along with Martin Butley will take care of the vibrating slit. The completion date for the project is set at May 31, 1969 (by the way, Diane—what did you do with that \$27.00, and Dave—where are you? Gene, when are you going to order the mirror kit? Marty, is the slit still vibrating?). By the way, when are we going to finish it—it's January, 1972!

...Yes, those were the good old days. Let's go to part of an article I wrote in the same issue under "Observational Astronomy".

"I used a 4½" reflector with a focal length of 900mm. The magnification used was only 45x in order to obtain sufficient light gathering power for the small telescope."

(Ah yes, notice how I try to convince everyone I'm a great writer when all I am really doing is reading the pamphlet given to me with my new telescope!)

Let's go to the April, 1969 issue for more old memories.

Club News (April 1969)

Occultation. "If the evening skies that night are typical of the area, it should prove a superb sight for our 12". In the future, club members are reminded to bring counterweights along with their telescopes.

(The night would be superb if we all paint Mr. Bloom's house a dull black.)"

...Mr. Ther, did you ever forget your counterweights after that article?

Projects: "Materials have been ordered and work has begun (Spectroheliometer)."

(By the way, Diane—what did you do with that \$27.00?)

Radio Telescope—Jim Trombley has been in the hospital for over three weeks, and as such, progress along these lines has been impossible.

Don't these flashbacks just bring tears to your eyes? Let us go on once again.

Schedule

18th of March, 1970 -- Solar Observing and Radio Telescope Group; Moon
at apogee
19th -- Optic and Telescope -making
Wednesday – 25th – W.A.S. General Meeting; Jupiter 6" n. of moon.

(. . . My, how things have changed!)

The First Two Messier Club Outings (In part- March, 1971)

"I just want to tell you a little bit about our journey there. My view was partially obstructed by my trunk, which is in the front with my mounting extending out of it.. I was whipping along 75 mph. when I began to lose sight of Dave and Don. (driving in front of me) who I was following. They finally slowed up and allowed me to gain sight of them. I had a hard time handling the car with my trunk partly open on the expressway. Dave Ther got in a playful mood and started strobing me. (If you don't know what that means--it is when a person temporarily blinds you with a series of illuminating beacons from his flash attachment). This did cause a minor visual problem, but I waited for the fog to clear from my eyes and tried desperately not to look toward their car until I felt the "little devil" was done goofing around. (I felt like using much stronger words, but this was only our 3rd issue).

My third worry was when I started out with a quarter of a tank of gas and saw it dwindle rapidly, as a family from the W.A.S. and myself followed Don (Misson)and Dave Around and Around and Around the park. We had finally found a spot that we had passed 40 minutes earlier, but we had an enjoyable evening all the way Around."

The Second Outing

"That night I wore three pairs of pants, three pairs of socks, three sweatshirts, a jacket, and a pair of mittens. Dave Ther was unrecognizable- with his outfit.

. . .We had couples out to look through the scopes and others were parked farther behind us participating in events other than astronomy."

by --Frank McCullough

(Small bits of fun we used to have. . . . By the way, Diane—what did you do with \$27.00?)

Here is a little more astronomical Fertilizer to make your mind grow. (March, 1970 by Chris Edsall).

"The W.A.S.P. Deciphers Your Dubieties and Questions Your Queries." (written while the editor was on vacation).

.

QUESTION: When the building for our astronomy club's observatory was completed, it was found that the roof of the building was longer than the diameter of our dome. That's why the dome now rests on the building supported only by a wooden framework. Will the framework hold the dome or is there a major problem on our hands?

ANSWER: Actually, I'm not a carpenter by trade, nor are of my living relatives or ancestors. However, I met one once who talked me into taking shop for two semesters in ninth grade; and from that rather frightening experience, it comes to my mind (with lightening speed) that the structure will indeed support the dome if its weight does not exceed the value given in the formula:

$$\frac{X Y_2}{Y Y_5} = \frac{X_s Y_s}{r_s^2} \sqrt{\frac{M E}{L}}$$

Where e represents the diameter of the structure, the diameter of the dome, X and Y the carpenters working on the observatory, S their salary, r the length of their lunch hour, and Y whether or not they have paid their union dues this year.

Well, we'll wrap up the "oldie but goody time" with this one –again from Chris Edsall (March 1970).

Q.: I believe that I have made a startling astronomical discovery! After observing the planet Mars through my 3" reflector and examining charts of it, I turned my scope towards the full moon. It seems that at about 45x, when I move the eyepiece out of focus either way, the lunar features that make up the face of the Man in the Moon also move to resemble exactly the features of the Martian surface!

This has led me to conclude that: A.) The moon and Mars were formed exactly the same way so that the only reason Mars looks red is because its light must travel through much more of the interplanetary atmosphere to reach Earth, or B.) That the invasion and subsequent contamination of the lunar atmosphere by man have caused obscure lunar vibrations transforming the moon's surface to look like its sister planet's.

Please verify these facts for me.

K.D. (Kim Dyer)
Detroit

A.: Dear Mr. K.D.--Being a rather loyal and patriotic citizen, I have forwarded copies of your letters to NASA, the Jet Propulsion Laboratory, the FBI, and the U.N. Security Council. I think it is only fair to remind you, however, of your civil rights and that they probably won't be able to get you in Sweden, Red China, or Antarctica. Happy New Year, Mr. D.

Yes, those were the good old days and if you enjoyed these, well, that's just great because next month we will bring the smell 'of moth balls to your nose, as we unveil some more of "The Good Old Days".

Fire Signs

Aries

Planetary influence-Mars
Lucky gem-Amethyst
Colour of aura-Red

Leo

Planetary inf.-Sun
Gem-sardonyx
Colour-Gold

Sagittarius

Planet-Jupiter
Gem-Turquoise
Colour-Purple

Air Signs

Gemini

Planet-Mercury
Gem-Agate
Colour-Yellow

Libra

Planet-Venus
Gem-Opal
Colour-Violet

Aquarius

Planet-Uranus
Gem-Amethyst
Colour-Indigo

Water Signs

Cancer

Planet-Moon
Gem-Ruby
Colour-Green

Scorpio

Planet-Pluto
Gem-Topaz
Colour-Black

Pisces

Planet-Neptune
Gem-Aquamarine
Colour-Grey

Earth Signs

Taurus

Planet-Venus
Gem-Emerald
Colour-Pink

Virgo

Planet-Mercury
Gem-Sapphire
Colour-Blue

Capricorn

Planet-Saturn
Gem-Garnet
Colour-Brown

The symbols listed below
are probably of Druidic
origin-no one knows for
sure. This can be worked
backwards to find your
year's destination. If your
Year sign- matches your
zodiacal sign, you should
experience good fortune. If
not, naturally, disharmony
and the like will follow- so
be prepared to counteract
it! If you are ready, there
isn't a lot that one can not
readily surmount, be it real
or surreal.

Peace.

1971 - ♈ AIR
1972 - ♉ WATER
1973 - ♊ PLANT
1974 - ♋ ANIMAL
1975 - ♌ STONE

1976 - ♍ SUN
1977 - ♎ MOON
1978 - ♏ EARTH
1979 - ♐ FIRE


Mary F. Kilby

Interplanetary Prophets

The approach of the day when man will be able to travel through the cosmos has given rise to some unusual hypotheses in the non-Christian nations of Europe. Russian writers have maintained that Jesus and His apostles were extraterrestrials on a mission to our planet, and that it would be a mistake to give a metaphysical interpretation to the heaven mentioned in the Bible; heaven is literally the sky, that is, the planets and the stars, and when the Bible says that Elijah was carried up to heaven by a whirlwind, or that Enoch walked with God, these words should be given a physical meaning.

According to this theory, when Elijah and Enoch had finished their mission on earth, they went by spacecraft to the planets of extraterrestrials, the rulers of our galaxy.

Elijah, delegated by the Lord to turn Israel away from false gods, was an expert in all sorts of magic. He was able to ignite fires electrically (on Mount Carmel) and destroy enemies at a distance. He was finally carried away by a whirlwind in the presence of his disciple Elisha, who had been initiated into his master's secrets.

Enoch was an interplanetary traveler who explained his knowledge by means of visions. His written work, the Book of Enoch, now known only through an Ethiopian translation, is an amazing compendium of theology and cosmology.

Enoch tells of the joys celebrated between angels (extraterrestrials) and the daughters of men, the birth of mutation and the misfortune that resulted from it; he plays the part of Prometheus between God and his creatures; he describes his wondrous journeys to different parts of the heaven and the earth; he declares that he knows the secrets of the universe and reveals an astonishing knowledge of the stars and planets.

According to tradition, he invented writing, arithmetic, and astrology, and he is given the title of "Father of Institutes" or "Father of the Gods" and like Elijah, he was finally taken up to heaven.

A question arises with regard to the great Hebrew initiates: Were they not all extraterrestrials?

The Russians who hold this theory have no doubt that men from another planet came to earth in the distant past.

Moses, continues the Russian theory, gave the men of his time, a God who actually modeled after the leader of the extraterrestrials. The Biblical texts have thus been misinterpreted, and a false religion has been born of that mistake. While the idea of God has not yet been abolished, the meeting of the Ecumenical Council shows that established want to break out of their traditional framework and change the image of God.

This new interpretation is tendentious, but it will be echoed to some extent by men of the new era. It is even possible that Pope John XXIII showed a certain inclination in that direction by approving the work of Teilhard de Chardin and renovating some of the concepts of the church.

Reprinted from
One Hundred Years of
Man's Unknown History by
Robert Charroux

mfr

A handwritten signature in black ink, appearing to read "Mary F. Riley". The script is cursive and somewhat stylized, with the first name "Mary" being more prominent than the last name "Riley".

Constellation of the Month

210020

Technically known as Capricornus, it is located near the constellation Aquarius. It is outside of Cancer, the most inconspicuous constellation of the heavens, however, it does contain several bright stars and has its own meteor shower, Alpha Capricornids. This shower should be looked for from July 25th to August 4th. They are bright and slow moving, leaving a long and sparkling trail.

In Greek legend, Capricorn was the stellar reincarnation of the cloven-foot god, Pan. Pan was the god of the fields and flocks who [was] pursued and attacked on the banks of the Nile by the monster Typhon, plunged into the river, changing himself into a monster goat with the hindquarters of a fish.

The brightest star in Capricorn is the double star Algiedi, from the Arabic word, kid (young goat), the second, Dahib, the lucky one of the slaughterers, which the Arabs kill a goat in sacrifice on the rising of Capricorn. The third brightest star is Nashira, the announcer of good tidings, the fourth, Deneb Algiedi, tail of the kid.

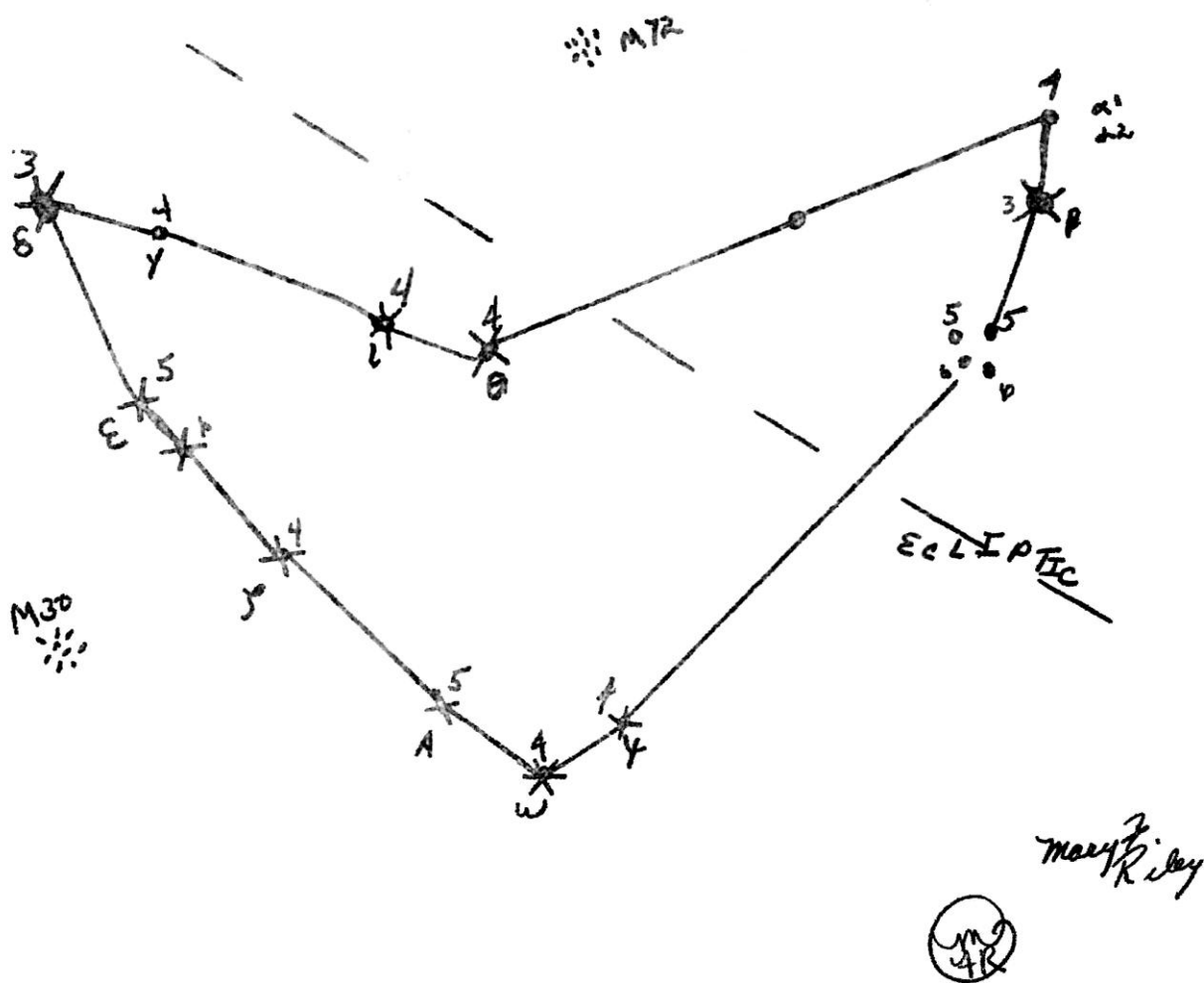
In 1846, the planet Neptune was discovered among the stars of the constellation, giving the constellation some notation among the stars.

Twenty minutes east and 3 degrees north of Delta Capricorni is the point in Aquarius calculated by Adams and Le Verrier for the position of the planet Neptune, close to the observed position when it was discovered by Galle the night of September 23rd, 1846. Of note: in the year 2449 B.C., five planets were observed to be in conjunction by the Chinese astronomers.

continued

There are five double stars in Capricorn. Alpha 2 is a telescopic double showing up as yellow with a magnitude of 3.8 – 9.5. Alpha 1, its companion, has a magnitude of 4.6 – 9.0.

The Messier objects in this constellation are few and far between. M30 and M72 are it and M72 is a renegade from Aquarius. So we're stuck with M30 - however, it is relatively bright, containing an 8th magnitude star on the border. Wish there were more: I've never even seen it, to be honest.



Capricorn – the Uncapricious Climber

The mystery of music can melt into black and white, then dissolve into grey-Capricorn convinced, can make grey glisten like white onyx.

The herbs of Capricorn are barley, red beet, bistort, fumitory, hemlock (relieves pain of gout), hemp, ground moss, nightshade (this is poisonous when taken in large amounts), Yew, violet water, and meadow saffron.




A somewhat idealistic and refreshed feeling pervades the incoming solstice, as Mercury goes direct and the mood straightens out. Many alliances go down the drain, as well as a lot of polluted water. In many cases one will see what a scummy mess one is in and will have to spend the first two or three weeks cleaning it up.

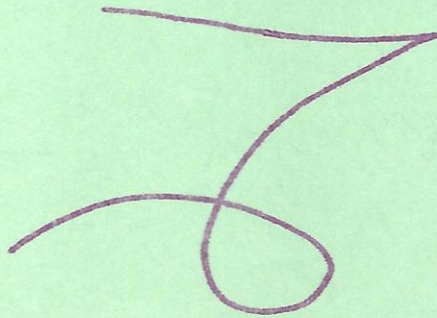
In the official world of reality – some peace or conciliatory measures made but expect undercover machinations both by hawks and doves to frustrate any permanent progress. A prominent woman makes outrageous news or dies. Some official problem or project involving liberation movements, air or space travel, and electrical contrivances go awry.

Born Under Capricorn

Poet	Edgar Allen Poe
Painter	Cezanne
Author	Henry Miller
Star	Humphrey Bogart
Composer	Puccini
Philosopher	William James
Head of State	Richard Milhous Nixon
Wit	Oscar Levant

Capricorn Calendar

S	M	T	W	T	F	S
			Dec.22 Winter Solstice	23 Sun returns	24 	25 Stand alone & apart
26 Eliminate old fears	27	28 think new thoughts	29	30	31 wolf moon	1-Jan. waning
2 disguise yourself	3 abstain from flesh meat	4	5 sign nothing	6 wear your own colour	7	8 
9 do nothing	10	11	12 hear the voice of the wind	13	14	15 spend this day alone
16 	17 waning	18 rejoice in being	19	20 believe in your power		



Mary Riley

M7R

ASTRO-ALMANAC

By

Kenneth Wilson

MOONS OF		EVENT
FEB. /	JUPITER ¹ /	
1	3240*	
2	43210	
3	40312	
4	4103d	Uranus 6° N. of the moon at 23 ^h
5	42013	Opposition of Ceres at 15h, Beginning of Auriga meteor shower (thru 10 th) – very slow: fireballs, radiant: 5 ^h 0 ^m +41°. Noon at apogee (251,400 mi.) at 20 ^h .
6	41023	
7	43012	Last Quarter Moon at 6 ^h 11 ^m .
8	34210	Neptune 6° N. of Moon, at 19 ^h .
9	32044	Antares 0.2° S. of Moon at 01 ^h , Twilight begins: 5:31 – ends: 19:00 LMT
10	0124*	Jupiter 3° N. of Moon at 18 ^h .
11	10234	Juno stationary, at 12 ^h .
12	20134	
13	10234	
14	30124	Greatest hel. lat. S. of Mercury, New Moon at 19 ^h 29 ^m .
15	32104	Mercury at 21h46m-15°35', Venus at 0h21m+1°50' (Mag.-3.6), Mars at 2 ^h 14 ^m -13°04' (Mag. +1.2), Jupiter at 18 ^h 06 ^m -23°05' (Mag. -1.5), Saturn at 3 ^h 52 ^m +18°17' (Mag.+0.3), Uranus at 13 ^h 08 ^m -6°28', Neptune at 16 ^h 14 ^m -19°33'.
16	32014	
17	042**	Superior conjunction of Mercury at 02 ^h , Noon at Perigee (226,900 mi.) 14 ^h , Venus at 5° S. of Moon at 23 ^h , W.A.S. General Meeting.
18	41023	
19	42013	Mars 5° S. of Moon at 19 ^h , Twilight begins: 5:19 – ends: 19:10 L.M.T.
20	4103*	Venus at ascending node.
21	43012	Saturn 7° S. of Moon at 11 ^h , First Quarter Moon, 12 ^h 20 ^m .
22	43120	
23	43201	
24	4302*	
25	41023	
26	20413	
27	1034*	
28	0124d	Full Moon at 22 ^h 12 ^m .
29	31204	Twilight begins: 5:06 – ends: 19:21 L.M.T.

(Note: All times, unless otherwise noted, are in 24 hour Eastern Standard Time.)

¹0 represents Jupiter, d means the moon is on Jupiter's disc, * means the moon is in shadow or behind the disc. The configurations are for the inverting telescope at 5h E.S.T.

ASTROPHOTOGRAPHERS

Save time and film. Twenty-page booklet (8½ by 11 in.) contains exposure data for the sun, moon and planets, and has a recently expanded eclipse section. Fifteen exposure guides list shutter speeds for all films (4 to 2000 ASA) and f ratios (1.4 to 256.0). Includes instructions for first focus, afocal, negative and positive projection telescope photography. Send \$2.00 to Larry F. Kalinowski, 15674 Flanagan Ave., Roseville, Mich. 48066. Phone (313)-776-9720. SPECIAL OFFER: \$1.00 off regular price of \$2.00 for all Warren Astronomical Society Members.

EXPOSURES FOR ICE SHOWS, RAINBOWS, TELEVISION SCREENS, SUNSETS AND OTHER UNUSUAL SUBJECTS

THERE ARE many interesting subjects that are best photographed, or can only be photographed, by the existing light, this light being of an unusual nature in some respect so that conventional methods of determining the exposure either involve problems or are not at all practicable. Some subjects themselves produce the light by which they are photographed.

A wide variety of these subjects are listed in the classification table below. Generally the best method for setting the exposure for these subjects is to follow an exposure chart based on the accumulated experience of others and such a chart is printed here. It is a revised version of similar charts we have prepared in the past. A few subjects in the table can be metered rather readily but are included to suggest picture possibilities and in case an electric eye device is not being used.

To photograph the variety of subjects listed here requires a camera with manual settings, a fast lens and a wide range of shutter speeds. If your camera is not that versatile and you would like to photograph these subjects as opportunities arose, have us show you cameras with the necessary features.

HOW TO USE THE EXPOSURE CHART

1. In the table at right find the classification number for the subject to be photographed.
2. In the exposure chart find the recommended exposure in the horizontal row for this class of subject and under the speed rating of the film to be used.
3. Refer to the notes at the right of the chart for supplementary instructions. The circled numbers in the chart and table refer to correspondingly numbered items in the notes.

EXPOSURES FOR PHOTOGRAPHY BY EXISTING LIGHT AT VARIOUS ASA FILM SPEEDS									
SUBJECT CLASS	FOR STILL PICTURES					FOR MOVIES			
	25-32	40-64	75-100	125-200	320-500	1000-1250	25-40	100-200	500
1	Set lens wide open	Set lens wide open	Set lens wide open	Set lens wide open	Set lens wide open	Set lens wide open	NR	NR	NR
2	f/3.3	f/4.7	f/5.6	f/8	f/11	f/19	NR	NR	NR
3	f/4.7	f/6.7	f/8	f/11	f/19	f/28	NR	NR	NR
4	NR	120 f/1.7	120 f/2	60 f/2	45 f/2.8	22 f/2.8	NR	NR	f/5.6
5	NR	NR	NR	10 f/2.8	10 f/2	5 f/2	NR	NR	NR
6	30 f/2.4	30 f/3.3	30 f/4	30 f/5.6	30 f/9.5	22 f/11	NR	NR	NR
7	30 f/3.3	15 f/3.3	15 f/4	15 f/5.6	15 f/9.5	8 f/9.5	NR	NR	NR
8	16 f/3.3	8 f/3.3	8 f/4	8 f/5.6	8 f/9.5	4 f/9.5	NR	NR	NR
9	3 f/1.4	3 f/2	3 f/2.4	3 f/3.3	3 f/5.6	2 f/6.7	NR	NR	NR
10	NR	8 f/4.7	8 f/5.6	8 f/8	3 f/8	1 f/6.7	NR	NR	NR
11	NR	3 f/4	1 f/2.8	1 f/4	1 f/6.7	1 f/9.5	NR	f/1.2	f/1.4
12	NR	3 f/4.7	3 f/5.6	3 f/8	2 f/11	1 f/14	NR	f/1.2	f/1.4
13	NR	NR	NR	NR	1/30 f/1.4	1/30 f/2	NR	f/1.2	f/1.4
14	NR	NR	NR	NR	1/30 f/1.7	1/30 f/2.4	NR	f/1.2	f/1.7
15	6 f/6.7	6 f/9.5	6 f/11	6 f/16	2 f/16	NR	NR	NR	NR
16	NR	NR	NR	1/30 f/1.4	1/60 f/1.7	1/60 f/2.4	NR	f/1.4	f/2.4
17	NR	NR	1/30 f/1.4	1/30 f/2	1/60 f/2.4	1/60 f/3.4	NR	f/2	f/3.3
18	NR	1/30 f/1.7	1/30 f/2	1/30 f/2.8	1/30 f/4	1/30 f/6.7	NR	f/2.8	f/4.7
19	NR	1/30 f/1.7	1/30 f/2	1/60 f/2	1/60 f/3.5	1/125 f/3.5	NR	f/2.8	f/4.7
20	1/30 f/1.7	1/30 f/2.4	1/60 f/2	1/60 f/2.8	1/60 f/4.7	1/125 f/4.7	f/2	f/4	f/6.6
21	1/30 f/1.7	1/30 f/2.4	1/60 f/2	1/125 f/2	1/125 f/3.3	1/250 f/3.3	f/2	f/4	f/6.6
22	1/30 f/2.4	1/30 f/3.3	1/60 f/2.8	1/60 f/4	1/60 f/6.7	1/250 f/6.7	f/2.4	f/5.6	f/9.5
23	1/30 f/2.4	1/60 f/2.4	1/60 f/2.8	1/125 f/2.8	1/125 f/4.7	1/250 f/4.7	f/2	f/4.4	f/9.5
24	1/30 f/3.4	1/30 f/4.7	1/60 f/4	1/60 f/5.6	1/125 f/6.7	1/250 f/9.5	f/3.3	f/5.6	f/14
25	1/125 f/1.7	1/125 f/2.4	1/125 f/2.8	1/125 f/4	1/250 f/4.7	1/250 f/6.6	f/3.3	f/5.6	f/14
26	1/60 f/3.3	1/125 f/3.3	1/125 f/4	1/125 f/5.6	1/250 f/6.7	1/250 f/9.5	f/4	f/8	f/19
27	1/30 f/6.7	1/30 f/9.5	1/60 f/8	1/125 f/8	1/125 f/14	1/250 f/14	f/6.6	f/11	f/26
28	1/30 f/6.7	1/30 f/9.5	1/30 f/11	1/30 f/16	NR	NR	f/6.6	f/11	f/26
29	1/30 f/8	1/60 f/8	1/60 f/9.5	1/125 f/9.5	1/125 f/16	1/250 f/16	f/8	f/16	NR
30	1/30 f/9.5	1/60 f/9.5	1/60 f/11	1/125 f/11	1/250 f/14	1/500 f/14	f/9.5	f/19	NR
31	1/60 f/9.5	1/125 f/9.5	1/125 f/11	1/250 f/11	1/500 f/14	NR	f/14	NR	NR
32	1/60 f/11	1/125 f/11	1/125 f/14	1/250 f/14	1/500 f/16	NR	f/16	NR	NR

SUBJECT CLASSIFICATION TABLE

Amusement park—whirling lights on ferris wheels and other rides	15
Artificial satellite (visible to the eye)	1
Aurora Borealis (northern lights)—bright	5
Baby in bath—bright artificial light	19
Baby in hospital nursery—bright artificial light	17
Baseball, Night—bright field	21
Basketball—artificial light, indoors	19
Bonfire	20
Bowling alley—bowlers awaiting turns	16
Bowling alley—lanes	19
Boxing	21
Building, Burning	20
Building, Floodlit	11
Campfire	20
Candlelit close-up	13
Carlsbad Caverns	10
Christmas lighting of homes—exterior	12
Christmas tree, Community—outdoors at night	17
Church interior—medium-bright artificial light	16
Circus—floodlit acts	19
Circus—spotlit acts	23
Fireworks—displays on the ground	20
Fireworks—skybursts	3
Football, Night—bright field	21
Fountain—floodlit	11
Hockey—indoors, artificial light	19
Home interior—average artificial lighting	14
Home interior—bright artificial lighting	17
Ice show—floodlit subjects	21
Ice show—several white spotlights on subject	25
Lightning	2
Meteors	1
Monument—floodlit	11

Moon, The full	32
Moon, The—quarter phase (half is illuminated)	29
Moon, Partial eclipse of—visible section	24
Moon, Total eclipse of	9
Moonlit landscape—front lighting, full moon	4
Niagara Falls—floodlit, dark colors	6
Niagara Falls—floodlit, light colors	7
Niagara Falls—floodlit, white lights	8
Race track at night	21
Rainbow—clear sky background	32
Rainbow—cloudy background	31
School stage—artificial lighting	16
Signs, Neon and other electric	22
Skyline—night view of distant lighted buildings	9
Skyline—10 minutes after sunset	22
Stage show—brightly lit	19
Star trails	1
Street scene at night—extra bright as at Las Vegas and Times Square	20
Street scene at night—brightly lit downtown	17
Sunset—sun above horizon	30
Sunset—afterglow	24
Swimming pool—artificial lighting, indoors	17
Television screen—black-and-white or color	18
Underwater shooting—1-3 foot depth	30
Underwater shooting—4-11 foot depth	29
Underwater shooting—12-14 foot depth	27
Window, Store—bright artificial light	20
Window, Stained glass—direct sunlight	26
Window, Stained glass—bright day, no direct sun	22
Wedding ceremony—dimly lit hall	14
Wrestling—very bright lighting	21

* The use of an exposure meter is recommended.
 † Color slide and movie film should be the daylight type.
 ‡ Color slide and movie film should be the tungsten type.

NOTES FOR THE TABLE AND CHART

All exposure times in the chart are in seconds. The symbol NR indicates that that combination of film speed and subject classification is not recommended.

Since the brightness can vary considerably between subjects of the same type, it is often advisable to bracket the recommended exposure with others, half and twice as large for color films and one-fourth and four times as large for black-and-white.

Generally, color films exposed by daylight and roughly similar light, such as from fluorescent and arc lamps, should be the daylight type, or tungsten film with a daylight filter. Color slide and movie films of the tungsten type should be used with incandescent lamps and for bonfires, floodlit scenes, etc. Assume spotlights to be arc lamps.

If film of a particular color balance is definitely to be used for certain subjects, this is indicated in the classification table. With some subjects—the whirling lights of a ferris wheel, for example, or fireworks—the color balance is not important.

In the case of most of the subjects in the classification table with which the use of an exposure meter is practical, and is so indicated by an asterisk, readings must be made with special care because of the large variation of brightness in the scene.

With blade-type shutters, if the lens opening called for is f/8 or smaller and the shutter speed is 1/250 second or faster, set the opening smaller by half a stop.

The long exposures in the chart are approximately corrected for reciprocity failure.

Use a tripod for exposures longer than 1/25 second.

① The long exposures produce interesting light patterns.

② Use a lens of normal focal length with an aperture at least as large as f/4.5 for films with a speed of ASA 400 and proportionately as large for other films. Hold the shutter open for the duration of the pass.

③ Preferably develop film for higher than normal contrast.

④ To dimly illuminate the house and grounds as if by moonlight, shoot at dusk.

⑤ Kodachrome-X and similar films can be exposed at 1/30 second and f/2.

⑥ With still cameras hold the shutter open long enough to record several bursts of fireworks or flashes of lightning on the same film. Avoid excessive exposure by sky light.

⑦ Use a normal or wide-angle lens at least as large as f/4.5 for ASA 400 film and proportionately as large for other speeds. Hold the lens open long enough to record one or more meteors. The longest exposure recommended is five to sixty minutes depending on the interference from sky light.

⑧ The data applies from two days before to two days after a full moon.

⑨ The data is for a clear sky with the moon at least 45° above the horizon. If its altitude is only 20°, increase the exposure by half a stop. Double it for a hazy night.

⑩ To speed up animated signs in movies shoot at half the normal frames per second. Adjust the f/ setting accordingly.

⑪ Any lens of normal focal length and with an f/4.5 aperture or larger can be used. A fast film is advised but even Kodachrome II can be used at f/2. Hold the shutter open from 30 minutes to several hours depending on the amount of interfering sky light. Avoid shooting at the time of a full moon.

⑫ Wet streets increase interest.

⑬ With the sun substantially covered by clouds or trees. The lens must be very clean.

⑭ To make the reds reproduce brighter in black-and-white pictures, use an orange filter and increase the exposure accordingly.

⑮ Adjust the set's contrast somewhat lower than normal. Dim the lights in the room and avoid reflections in the screen. Use a skylight filter with color slide and movie film. With focal-plane shutters and movie cameras there will be some unevenness of brightness across the picture.

⑯ The data is for a sunny day within 2 hours of noon, with an underwater visibility of about 50 feet and a light wind.

⑰ Photographed from inside the building.

⑱ Exposure has been minimized to reduce blur. A higher film speed is recommended.

⑲ Set lens wide open. Automatic cameras will do this automatically.

⑳ Expose each frame of the film for 5 seconds at f/1.4.

㉑ Shoot at half normal frames per second.

The special value of astrophotography is not what it makes of astronomy, but what it makes of the astronomer. No more is it the passive contemplation of a fixed universe; it becomes the hand to hand struggle where the explorer succeeds in snatching from the physical world which he would like to understand, certain image-information, always partial, which would allow him to make conclusions that are incomplete, and in general, only probable.