



Determine Sources of Night Sky Light

Chicago and Texas College Professors Make Study.

Chicago.—Although the huge 82-inch telescope of the McDonald observatory, joint project of the University of Texas and the University of Chicago, on Mt. Locke, Texas, is not yet completed, an investigation already is under way near the new observatory to determine the sources of light in the night sky.

Using an old 12-inch refracting telescope which was presented some years ago to the Yerkes observatory of the University of Chicago by Dr. G. E. Hale, assistant Professor C. T. Elvey of the Yerkes staff and Dr. F. E. Roach of the McDonald observatory have been recording the light of the night sky with a recording photo-electric photometer designed by Doctor Elvey.

The light of the night sky is made up of direct starlight; starlight which is scattered both by the earth's atmosphere and the matter in interstellar space; zodiacal light which is concentrated in the ecliptic but which may extend over the entire sky; and of the light originating within the atmosphere of the earth; the permanent aurora. This aurora is not the polar aurora, or northern lights, although it is related to it.

Many Study Problem.

Many investigators have studied the problem of the composition of the light, and a general investigation by the Dutch astronomer, Van Rhijn has

shown the following percentage composition: Direct starlight, 18 per cent; starlight scattered by the earth's atmosphere, 5 per cent; zodiacal light, 43 per cent; aurora, 15 per cent, and scattered earthlight, 19 per cent.

It is well known to astronomers that there are large fluctuations in some of the sources of light, particularly of the zodiacal light and the aurora. Lord Rayleigh found that the light of the night sky undergoes large variations, with a range of eight-fold between the smallest and largest.

The variations are sometimes fairly rapid, Doctor Elvey having found in his work at Yerkes as much as a 25 per cent change in brightness of the sky within a period of two hours. There also are daily variations in the intensity of the auroral light in the night sky, which in some parts of the world reaches a maximum about 2 a. m., and in other parts is at its maximum just after twilight has ended.

These large variations have made detailed analysis of the light difficult, because during the several hours required to cover the sky, there are many changes in the light.

To make possible observations in a brief space of time Doctor Elvey devised the recording photo-electric photometer. It consists of a very sensitive galvanometer which measures the output of the amplifier. The recording is achieved by shining a lamp on the galvanometer mirror, which reflects the light to a slit behind which is a moving sheet of bromide paper.

Deflections Recorded.

The deflections of the galvanometer are then recorded on the bromide paper, which is directly connected to the photometer so that it moves past the slit as the instrument is rotated around the vertical axis. With this instrument a complete record of the brightness of the sky on a circle parallel with the horizon can be made in approximately five minutes, and the entire sky can be observed in about an hour. A check of the variations in light during this time can be made by observing a given region of the sky several times.

Doctor Roach already has obtained over a hundred tracings with the instrument, from which he and Professor Elvey have determined the axis of the zodiacal light, the cone of light that can be seen rising from the horizon after sunset and before sunrise.

Contrary to general belief, the axis does not coincide with the plane of the orbit of the earth—the ecliptic. Observations show the morning zodiacal light is displaced to the north of the ecliptic by as much as five degrees. A series of evening observations indicate that in part of the ecliptic the zodiacal light was near the ecliptic, apparently crossing it.

The astronomers expect that a detailed analysis of the tracings will give the relative amount and the distribution of the light from various sources contributing to the total light from the night sky.

Let Your Light Shine

By LEONARD A. BARRETT

The world is like a mirror because it reflects our moods. That "things are very much as you look at them" is a true aphorism. Two persons facing the same condition and living in exactly the same neighborhood may receive contradictory reactions from the same environment. The one whose philosophy of life is that of Mrs. Wiggs of the Cabbage Patch will see hidden resources of light and beauty in surroundings which many persons would consider barren of any such possibilities. As the marble responds to the genius of the sculptor, so our environment reflects the thought and intents of the heart. We can see no beauty in a glorious sunset unless there is a sense of beauty already within us. The man who described the Grand canyon as a great big dump would probably be unable to see in the thundering Niagara anything more



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Helen May Try Comeback



Helen Wills Moody, former American women's tennis champion, who was forced to retire from the game a year ago because of back trouble, is practicing in California and may attempt a comeback.

than wasted horse power. A person who would have friends must show himself friendly. The light that shines from your personality makes your world. If you radiate sunshine and joy you will discover the same in other people. If you are selfish and mean you will find the same reflected back to you. We always see in the other person the fault that lies deepest in our own personality.

This law, which seems like a paradox, also affects the lives of other people. Emerson said, "A great institution is but the lengthened shadow of a single man." True—not only of institutions but of individuals. Henry Ward Beecher bought a newspaper from a poorly clad boy on a day in midwinter. He remarked, "Poor little fellow, aren't you cold?" The boy replied with a smile, "I was, sir, before you passed." It is said that Phillips Brooks could change the mood of a passing crowd on a rainy day in Boston because of his contagious and fascinating smile. We are told that "it takes sixty-four muscles of the face to frown and only fourteen to smile." Even nature has made it easier for us to have joy in our faces rather than hatred or anger. Browning makes Pippa say, "Wherefore repine—with thee to lead me—O day of mine."

Let Your Light Shine!

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Bears Catch Salmon
Bears in Alaska are expert at catching salmon.

The Household

By Lydia Le Baron Walker

THE satisfaction of having attractive housework frocks reaches farther than the woman who wears them. The effect of suitable attire, plus its becomingness, is more far-reaching. It has its influence on everyone who is of the household, and such other persons as may happen in during the morning or the working hours. It is not so far back that it is beyond the remembrance of the older generation of homemakers, when discarded afternoon or even old party dresses were made to serve more than their original purpose by being worn earlier in the day as a housework frock. This was thought to be an economy measure.

But the utter unsuitability of garment to tasks, finally won the battle between the desire to have the right working togs, and the mistaken notion of thriftiness. Slender women, especially those who are youthful can wear smock frocks well. The stout person should avoid them. Apart from the convenience of the loose fitting one-piece smock, there is a suggestion of artistry connected with smocks and studios, that appeals. But unless the garment is becoming it does not fill its requirements. On large women the smock becomes something of a glorified Mother Hubbard, too loose, and therefore gives the impression of greater weight.

Some Good Features.
A housework dress should be sufficiently ample to permit the wearer to stoop low without straining the seams. There should be one or two pockets, preferably set-in pockets as these do not catch on knobs, etc. The sleeves should be short or elbow length, unless the wearer needs the warmth of long sleeves. So many times the long sleeves must be rolled back, that the shorter ones are preferable. Flowing sleeves are inappropriate or those wide at ends.

A figured material will not accent every slightest mark as occurs with flat colors. Wash goods should be used. Some times a summer dress that is out of style can be made over into a house frock, and sometimes the style of the dress as it is, requires very slight changes to make it appropriately serve its more mundane purpose. Whatever the requirements of a house frock may be it should have the added feature of being becoming in cut and color.

To Look Attractive.
The woman who wants to look attractive and who doesn't, has one sure means at her command. It would be used more if it could be obtained at

a beauty parlor, and be paid for in dollars and cents. But this is something beyond price, yet it can be had without spending a penny. It is having a pleasant expression. This never fails to attract attention. It is the one sure way to the hearts of others. It has warmth and beauty in it. Homely features react to it. Fine features without it cannot have the same pull of attraction. The pleasant expression is a magnet. It has drawing power of attraction.

When you ride in a trolley or subway, take a look at the faces in it. How many have pleasant expressions? I have ridden in these conveyances many times when not a single face wore a pleasant expression. Some were sad, some heavy, some tired, some bold, some furtive, some curious, some indignant, but few if any that radiated sweetness or the beauty of a pleasant mind.

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Latest in Spring Hats



Fine brown straw trimmed with white, green and brown striped ribbon, modeled by Roxane.

My Neighbor Says:

Fruit stains in linen may be removed by sponging them with lemon juice and then washing with hot water. If lemon is not available, borax will be found just as effective.

When preparing nuts to use in cake or frosting, instead of chopping, place nuts in a paper bag and roll with a rolling pin.

To remove mildew stains from white linen, boil them in a water to which two tablespoonfuls of peroxide have been added to each quart.

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"Dust Storms" Figure on All Pages of History

No one who has not been in one of the dust storms which have swept the western plains for more than a year can appreciate their devastation and the apprehensions of the people in the region extending from the Gulf of Mexico to the Great Slave lake.

Science knows full well the potentialities of this terrible phenomenon. It has innumerable records of other soil transformations brought about by the wind. Much of the richer soil over vast areas in the United States was carried there by dust storms. An analysis of dust falling in Missouri a year ago revealed the characteristics of soil in the Dakotas. All soils are easily identified by their mineral content. The Dakotas had been exposed to drought for a number of years. The soil was deprived of its protective vegetation. Thus, when the wind blew, the soil was carried away to be deposited in other states.

To most of us who live where moisture is sufficient for human needs, it is difficult to realize that the dust storms have been raging all winter. Neither snow nor rain has been sufficient to keep the dust down even in mountainous states like Colorado. Heavy rains have flooded the lower Mississippi valley, but the shortage of moisture has gone right on in the plains. Whether in Texas or Saskatchewan, the wind has only to rise and the dust is blown. If anything, the dust storms have been worse than ever in the last two months. They have actually buried fences, piled dust high around houses and barns, covered up crops. They are destructive alike to man and beast. No form of life can withstand them day after day very long.

Needless to say, the dust phenomenon has greatly altered the food situation in the United States. It affects meats and grains. It is in part responsible for the increased cost of living. The AAA plan to limit the production of spring wheat has been abandoned. How can there be too much wheat when the wheat states are the chief victims of the dust? The drought reduced corn last year

Hard for Japanese to Master Own Language

The hardest job of the Japanese student is to learn his own language. Added to its own difficulties are the difficulties of Chinese; for modern Japanese contains a sprinkling of more than 50,000 Chinese characters. The primary student toils over his own language seven hours a week in class, seven hours a week at home, a total of fourteen hours a week for six years. At the end of that time he has mastered only about 3,000 of the Chinese ideographs (each having five or six different meanings). He can read a newspaper. But he is still baffled by a magazine or book, unless written in the most colloquial speech.

Even university students have a very uncertain knowledge of the literary language. It is supposed to be used in the composition of letters, articles, books. A young friend of mine in Tokio Imperial university, principal institution of learning in Japan, confesses that his uncle rarely hears from him—because any letter to him must be written in the old literary form, and its composition is a long and fatiguing task.

Even the greatest scholars cannot write without a good dictionary at hand. Educated men find it easier to read Japanese classics in an English translation than in the original. Willard Prince, in Asia Magazine.

Dr. Pierce's Pleasant Pellets are the original little liver pills put up 80 years ago. They regulate liver and bowels.—Adv.

"What's Your Hurry?"
"Darling, answer me, I am on the rack."
"So is your hat," came a deep voice from the hall. Whereupon the young man took the hint, his hat-piece and his departure.

to a minimum. If it persists this year, there will be no reserves of corn left. From surplus induced by excess production in our own and other countries, we are in danger of passing to scarcity due to drought and dust.

Records of drought are readily traced in the rings of trees. There are records of other droughts in the plains as bad as or worse than the present drought. This is not, however, an assurance to science that we may now be witnessing the beginnings of one of those deserts in which nature delights. It was when the Southwest became a desert that the Indians moved into Mexico. Life follows the moisture-bearing air currents. When they passed from the region south of the Mediterranean to the region north of the Mediterranean, life followed them. The Asiatics have long been accustomed to packing up and following the moisture-bearing winds.

Science would not care to assert its entire apprehensions of the dust storms in the western plains. They may be the consequences of just another drought. Or they may be the beginning of the end for all that region where the buffalo grazed. Science knows what has happened. What is to happen is on the knees of the gods.—St. Louis Post-Dispatch.

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Two of 5,000 Claimants of Big Estate



From far and near, from all parts of the United States, and some parts of Europe, some 5,000 claimants, or their representatives, have come to Philadelphia to contest for the estate of the late Walter Barrett, wealthy snuff manufacturer, who died in 1895. His widow died in 1930, and it is maintained that she did not follow the provisions of her husband's will in disposing of the estate, and so the issue is being fought out in court at Philadelphia. Two of the claimants are pictured: Left, Mrs. Clinton Schaffer and daughter of Parker Ford, Pa., and Mrs. Lawrence Kidd and daughter of Baltimore, Md.

AMAZE A MINUTE

SCIENTIFACTS BY ARNOLD

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