

The Bee's Home Magazine Page

What the Spots on the Sun Mean

They Possess a Great Deal of Significance and Importantly Affect the Earth, but the Spirit in Which the Wise Astronomer Studies Them is a Tremendous Lesson for Mankind.

By GARRETT P. SERVISS.

We shall hear a great deal about sunspots from this time forward, because they are coming on, once more, with increasing numbers and growing magnitudes. If you look at the sun, now, with a spy-glass,

or a binocular, taking care to protect the eyes with deeply smoked glass screens, or better, with a pair of electricians' black spectacles, you will see one or two groups of dark spots, which look like flyspecks on an electric-light globe. To a powerful telescope these offer a wonderful appearance, the larger spots having ink black centers, surrounded with penumbral shadows, while in some places around the spots the surface of the sun is spattered with brilliant white splashes. These, which are seldom seen unless the spots happen to be not very far from the sun's edge, are the faculae ("little torches") of the astronomers. Faculae are brighter and more numerous near sunspots, but they also exist independently in places where there are no dark spots to be seen.

The return of sunspots is a phenomenon that astronomers regard with great concern. They come flocking back once in about eleven years. It takes, on the average, four and a half years for them to reach a maximum of numbers, when the sun is seen to be more or less speckled

every day, and six and a half years to decline again to a minimum, when for months in succession the sun's face is as clean as a polished mirror. Upon the whole, the heat on the earth, taking its entire surface into account, and basing the observation on the temperature of the atmosphere, is about one degree and a quarter of the Fahrenheit scale lower at sunspot maximum than at sunspot minimum.

This cannot be wholly due to the darkening of the sun caused by the presence of the spots, since, as Mr. C. G. Abbot of the Smithsonian Institute has shown, the amount by which the temperature is lowered is five times too great to be accounted for in that way.

But there are other ways in which an invasion of a horde of spots on the sun makes its effects felt upon our globe. The most conspicuous of these is in connection with the earth's magnetism. The earth is a great magnet, and the sun appears to exercise a direct influence upon its magnetic state, that influence varying with the condition of the sun as to spots. When sunspots are at a maximum, magnetic storms of great violence occur, during which the electro-magnetic excitement of the earth is vividly manifested—in the atmosphere by imposing displays of the aurora borealis, and in the earth itself by vagabond currents which interrupt telegraph and cable communication, and sometimes leap into visibility and audibility in the form of crackling sparks and electric flames playing about the instruments.

Occasionally it has been possible to trace phenomena of this kind to the influence of individual sunspots of unusual magnitude and activity. It is like the transmission of a shock from the sun to the earth, across a gap of 93,000,000 miles, supposed to be filled with nothing but the invisible and intangible ether.

Exactly how the forces that produce spots upon the sun affect the earth's weather is an unmet question. There is a considerable amount of evidence for saying that such storms as our western tornados, the hurricanes of the West Indies and the typhoons of the China seas, are far more numerous during sunspot maxima, and especially during the time that spots are increasing in number. It has also been thought that wet and dry seasons are connected in some way with the sun spot cycle, but on this subject the evidence is contradictory. Some statistics show that dry seasons accompany sun-spots, and others that wet seasons accompany them.

But all of these things are really of little account in comparison with the great question of the effects produced upon the sun itself. The earth is a speck in the infinite vault of space, we are animated atoms living for the fraction of a moment upon that insignificant speck! Of how great consequence in the vast scheme of the creation can the little questions that relate to our ephemeral comforts be? If a sunbeam should flick us up or disappear from the universe, physical considerations would be of less importance than that of the minutest drop of water from the ocean. But if the sun should disappear there would be a star gone from heaven. A part of the universe, at least, would notice its absence. Whatever threatens the existence of the sun, then, has an appreciable importance. The astronomer finds that the sun spots are symptomatic of progressive changes which will eventually bring the sun's career to an end, and he studies them, not for the sake of finding out merely how they may affect our petty affairs, but in order to trace, for his intellectual satisfaction, the grand phenomena of the life and death of a star. And in doing that he is pursuing the only course which can rescue man from oblivion, offsetting his material insignificance and nothingness with the relative greatness of his mind.

Advice to Lovelorn

By BEATRICE FAIRFAX

Invite Him to Your Home.

Dear Miss Fairfax: I am a girl of 13. Six months ago I met a man six years my senior. I am an orphan, and he is the only man who has shown me any attention. He told me he loved me, and he still keeps on telling me so. Now do you think I ought to tell him the circumstances and ask him up some even money? My uncle will be out and my aunt will be home?

By all means invite this young man up to meet your aunt. He shows a very nice spirit in wanting to know your people, and by this very attitude proves his respect for you. If you think your uncle would not be cordial to him, have him meet your aunt. Don't sacrifice a friendship because of a silly unwillingness to confess that your uncle is rather stern to you. Perhaps when he sees what a fine young man your friend is your uncle will respect you all the more for having won the friendship of such a worth while young man.

A Case of Frankness.

Dear Miss Fairfax: A gentleman has an appointment with a young lady. At the last moment the lady finds that she will be unable to keep the appointment. The gentleman then calls on another young lady who is willing to take the appointment. The second lady then finds, after keeping the appointment, that the gentleman had the appointment with the first girl. Has the second girl any reason for feeling insulted?

ALEX. BRICE.

Few girls like to feel that they are "second choices." This is a petty feeling that might be eliminated by any man who would frankly state the case. The girl of whom you speak had no cause to feel insulted—but you might have saved her from this feeling of slight by starting out with the assumption that she was a good enough friend of yours to be willing to go with you even though you had on this occasion happened to ask another girl first.

Old Flames

—JUNE—

By Nell Brinkley
Copyright, 1915, Intern'l News Service.



"Let's see." The man leaned back, rubbing his chin that looked a bit whithered in the upward glimmer of the firelight. "I was 20—by George! When June came along, 'June came along,' I mean when June bloomed into my life—like a glad, golden poppy—so lanned she was; swirled into my life like a strong, soft, west wind. And west winds breathe of free things and are rich with song! And that was June—she had a voice—she sang like a lark. "When she opened her clean-cut, red, sweet mouth and tipped back her ruffled head her voice rose and knocked at the doors of paradise—a silver messenger! The meadowlark on the telegraph pole leaned and burned and ruffled with envy when June sang. And June had character—she was no shadow girl. She was as real as I through as the smooth strength of her brown arm. June was a blonde, sun-smitten to gold. I was suddenly gone blank where the mystery of my 'golden eyes' was concerned—my mind simply failed to remember her—and my whole heart turned back to the pal-needs of the days of Ivy. "But June was a woman, too. June was a peach—really, truly; peach-like in her gold and red, peach-like for sweetness, peach-like for wholesomeness and bloom. She was a lithe, strong person, always laughing, alert, appreciative, patient, with a mind like flame to the tender of my brain that was growing and thinking. She came from the west—from the prairie; and sometimes I could see the width and vastness and the breathless beauty of them in her eyes when she looked past me. June's eyes were gray. The color of the raindrop that runs down the crystal of the window-pane—with black

pupils that widened and spread when she listened intently—and she listened a heap—oh, dealer in romance! For I talked a lot then. And June put her strong shoulder to the underpinning of the castles I builded. "Her face was cleverly modeled, with a strong chin and wide brows—and her brown gold hair blew across her cheeks, like corn tassels across the reddened ears. June and I swam one long summer through together—fighting the topping green and cream surf. June had almost as good a stroke as I—but not quite—and I was glad about that. So had my ideals changed since the first pal, Ivy. For I was glad, with an exulting leap in my heart, when June tired and floated, with a hand on my hair. "June taught me gaiety, courage and valiancy. She seared out of my heart what lurked there of unwholesomeness in my love of mystery. Because of her and the unchangeable worship of sane goodness she bred in my heart did I later tear out of my life a flame that thrived on sunless things and grotesquerie! "June burns bolden—a flame that has not ever completely died down in my life. The clasp of her strong, pretty fingers is printed on my hand for keeps. "Once I kissed June. In the canoe. In a purple twilight when all the sound water and the air was a swimming flood of wine color. And that I will not tell you of. "I know June still. You see, June was a trifle older than I—and she didn't wait for me. "Which," says she, and I don't believe her, "was a very good thing, dear boy." —NELL BRINKLEY.

The Heavens in December

By WILLIAM F. RIGGIE.

The winter constellations are coming into view. Orion is very conspicuous in the southeast in the early evening, and all the great planets are visible, Venus, Jupiter, Saturn and Mars, along with Sirius, Procyon, Aldebaran, and many other first-magnitude stars.

On the 23d at 4:35 p. m. the sun reaches its farthest south and enters Capricorn, and astronomical winter begins. That day is the shortest of the year, nine hours and eight minutes. This length varies scarcely more than a quarter of an hour the whole month.

The standard times of the rising, meridian passage or setting, and setting of the sun and moon at Omaha during the month are given in the following table.

Date	SUN.			MOON.			
	Rise	Merid.	Set	Rise	Merid.	Set	
12.1	7:31	12:14	4:55	Wed.	1:26	7:33	1:26
2	7:32	12:15	4:54	Thu.	2:28	8:20	1:23
3	7:33	12:16	4:53	Fri.	3:29	9:05	1:20
4	7:34	12:17	4:52	Sat.	4:28	9:45	1:16
5	7:35	12:18	4:51	Sun.	5:25	10:20	1:12
6	7:36	12:19	4:50	Mon.	6:20	10:50	1:08
7	7:37	12:20	4:49	Tue.	7:12	11:15	1:04
8	7:38	12:21	4:48	Wed.	8:00	11:35	1:00
9	7:39	12:22	4:47	Thu.	8:85	11:50	9:56
10	7:40	12:23	4:46	Fri.	8:68	12:00	8:52
11	7:41	12:24	4:45	Sat.	9:48	12:05	7:48
12	7:42	12:25	4:44	Sun.	10:25	12:05	6:44
13	7:43	12:26	4:43	Mon.	11:00	12:00	5:40
14	7:44	12:27	4:42	Tue.	11:32	11:50	4:36
15	7:45	12:28	4:41	Wed.	12:00	11:35	3:32
16	7:46	12:29	4:40	Thu.	12:25	11:15	2:28
17	7:47	12:30	4:39	Fri.	12:45	10:50	1:24
18	7:48	12:31	4:38	Sat.	1:00	10:20	1:20
19	7:49	12:32	4:37	Sun.	1:10	9:45	1:16
20	7:50	12:33	4:36	Mon.	1:15	9:15	1:12
21	7:51	12:34	4:35	Tue.	1:15	8:40	1:08
22	7:52	12:35	4:34	Wed.	1:10	8:00	1:04
23	7:53	12:36	4:33	Thu.	1:00	7:15	1:00
24	7:54	12:37	4:32	Fri.	9:45	6:30	9:56
25	7:55	12:38	4:31	Sat.	9:20	5:45	8:52
26	7:56	12:39	4:30	Sun.	8:50	5:00	7:48
27	7:57	12:40	4:29	Mon.	8:15	4:15	6:44
28	7:58	12:41	4:28	Tue.	7:35	3:30	5:40
29	7:59	12:42	4:27	Wed.	6:50	2:45	4:36
30	8:00	12:43	4:26	Thu.	6:00	2:00	3:32
31	8:01	12:44	4:25	Fri.	5:05	1:15	2:28

The dot or period between the hours and minutes indicates a. m. times. The times not so marked are p. m. The sun is fast on sun dial time from the 1st to the 25th, and slow the rest of the month, the exact amount in minutes being the difference between 24 and the minutes given after 12 in the "noon" column.

Venus is well visible in the southwest after sunset. On the 15th it sets at 6:29 p. m. Jupiter is still in full brilliancy. It sets at midnight on the 13th.

Saturn is in fine position near Castor and Pollux in the Twins. It souths at 7:53 a. m.

Mars rises on the 15th at 10:01 p. m.

The time of rising and setting of the planets may be found for other days by adding four minutes per day before the given date and subtracting them after. The moon is new on the 6th at 12:04 p. m., in first quarter on the 13th at 5:31 a. m., full on the 21st at 6:32 a. m. and in last quarter on the 29th at 6:39 a. m. It is in conjunction with Venus on the 7th, Jupiter on the 13th, Saturn on the 23d and Mars on the 25th.

Start Tomorrow and Keep It Up Every Morning

Get in the habit of drinking a glass of hot water before breakfast.

We're not here long, so let's make our stay agreeable. Let us live well, eat well, digest well, work well, sleep well, and look well. That a glorious condition to attain, and yet, so very easy. It is if one will only adopt the morning inside bath.

Folks who are accustomed to feel dull and heavy when they arise, splitting headache, stuffy from a cold, foul tongue, nasty breath, acid stomach, can, instead, feel as fresh as a daisy by opening the stapes of the system each morning and flushing out the whole of the internal poisonous stagnant matter.

Everyone, whether ailing, sick or well, should, each morning, before breakfast, drink a glass of real hot water with a teaspoonful of limestone phosphate in it to wash from the stomach, liver and bowels the previous day's indigestible waste, sour bile and poisonous toxins, thus cleansing, sweetening and purifying the entire alimentary canal before putting more food into the stomach. The action of hot water and limestone phosphate on an empty stomach is wonderfully invigorating. It cleans out all the sour fermentations, gases, waste and acidity and gives one a splendid appetite for breakfast. While you are enjoying your breakfast, the water and phosphate is quietly extracting a large volume of water from the blood and getting ready for a thorough flushing of all the inside organs.

The millions of people who are bothered with constipation, bilious spells, stomach trouble; others who have sallow skin, blood disorders and sickly complexions are urged to get a quarter pound of limestone phosphate from the drug store. This will cost very little, but is sufficient to make anyone a pronounced crank on the subject of inside-bathing before breakfast.—Advertisement.

To Have Perpetually Wavy, Curling Hair

Perpetually wavy, curling hair is now within the means of every woman to possess. All one need do is to get a few ounces of plain liquid salinizing, styling, cleansing and sickly complexion are urged to get a quarter pound of limestone phosphate from the drug store. This will cost very little, but is sufficient to make anyone a pronounced crank on the subject of inside-bathing before breakfast.—Advertisement.

A Fine Family Dinner For 10c—Prepared in 30 Minutes.

Here is a meal that is at once nutritious, easy to digest, easy to prepare, satisfies the hunger and the faintest of appetites and costs but a trifle. Cook a whole package of Faust Spaghetti for about 30 minutes with tomatoes and sauce piping hot with grated cheese as a spread. With bread and butter this dish is just about as tasty as you could wish for—there's a fine racy smack to it that is really enjoyable. Made from Durum wheat, Faust Spaghetti is a slightly glutinous food—contains the food elements that make for muscle and tissue. Comes in large 10c packages and should be frequently served as a partial substitute for meat and as a whole meal.

MAULL BROS. St. Louis, U. S. A.

DIAMOND WATCHES ON CREDIT

CHRISTMAS GIFTS

GIFT IDEAS is here. You will receive handsome Christmas presents, and you will want to make equally beautiful ones. Don't think you must forego this pleasure because your ready money is limited. By opening a charge account with us you can gratify every wish and be satisfied with your gifts, while at the same time they will be easier to pay for than trifling ones where you have to pay cash. We suggest a beautiful Diamond Ring, or a La Valliere, Brooch, Ear Screws, Stud, Scarf Pin, Bracelet, Wrist Watch, Chain, Charm, Open Face or Hunting Case Watch, etc. Come in and see our magnificent mammoth assortment of all kinds of jewelry, and make your selection.

This Handsome Ladies' Lottis Belcher Diamond Ring



Gold Filled Thin Model Watch 17-Jewel \$12.75 Elgin



LOTTIS THE NATIONAL Credit Jewelers BROS. & CO. 1153 10th St. Omaha.

What Is Love?

By BEATRICE FAIRFAX.

"A man friend of mine says that love is a form of jealousy, and he adds that affection and love are the same thing. Now I like a great many people, but do not love them, and feel that jealousy would follow love rather than love jealousy. "Won't you explain the matter to me?" writes Edith. "What is love? Is a question that has been asked almost ever since the world began. The answers to it are about as numerous as are the individuals that populate the earth. Even the ideals of love differ according to climate, race and creed. A very clever man recently said to me, "Love is a matter of geography." Love is a matter of all sorts of externals, which it would be hard to define. But in an ideal state love ought to be and man and stand for certain very definite things.

First of all, love ought to be unselfish and seldom is. Real love ought to consider the happiness of its beloved, as well as itself. It ought to be faithful and tender and true, and because it is these things in itself it ought to believe in itself as its beloved. Jealousy is not part of love—it is love's cruel enemy, and it slays real love. If you cannot trust, you do not love—and make up your mind to that. Emotion and love are often mistaken for each other. Emotion may be a wild, turbulent thing of feeling and desire. It craves possession and resents the thought that its object can find happiness away from it. It is jealous, exacting, feverishly unhappy in itself, and all too likely to produce a similar effect in the person it honors with its dangerous devotion. Love ought to be honest, congenial, friendship, plus healthy normal human emotion. It has been defined as "friend-

ship plus flowers and veil." Emotion is not a thing to be despised or hidden. It is a beautiful, human expression that too many of us pervert by constant usage. John meets a charmingly attractive young girl; she appeals to his senses and he imagines he loves her. He goes excitedly whirling through an amorous adventure he calls a love affair. He demands loyalty and devotion, and since he cannot command them through faith and trust and well-balanced congenial attraction, he is miserably jealous and suffers, and causes all sorts of doubts. Neither John nor his charmer knows anything about love. They are having a facile, feverish affair in which youth is calling to youth and emotion is expressing itself without a background of understanding and respect and congeniality to make it worth while. True love longs to give happiness. It

believes in the kindly intentions of its beloved; it has faith when all the evidence points to unfaith. It has sympathy for pain; tenderness for weakness; hope for strength, and above all the splendid desire to be fine and worthy, and to make life more worth while because it has come into it. Love knows how much more blessed it is to give than to receive. Love is gracious and long-suffering. Love takes on the interests of its beloved. It casts out jealousy and doubt, and bitterness, and all harsh judgment. It does all these things if it is ideal love—the sort we all long for and do pathetically little to deserve. There is one thing we all owe to love—it is a high ideal of it, an ideal that will keep us from accepting cheap imitations—an ideal that will make us loath to be worthy of the promised land we can vision and may enter if we choose.