

Celestial Spectacle for Which Astronomers Have Waited 18 Years Occurs When Sun Goes Into Eclipse

Glorious Orb of Day Will Be Blotted Out for One or Two Minutes as Black Ball of Moon Passes Before It.

Eighteen years ago Father Rigge, as special representative of The Bee, went to Washington, Ga., to observe a total eclipse of the sun.

When asked if he would go to Colorado with other eminent scientists to witness the eclipse of the sun, which will be total there Saturday, June 8, Father Rigge said: "No, I will remain here for the reason that I have not the equipment necessary for the highly specialized work that is to be done now. Frost says that with a spectro-scope set 200 miles from the line of totality good results can be obtained.

"I have a spectroscope of twice that distance, and with it I hope to see the corona. If there is a rain the night before and a high barometer, atmospheric conditions will be ideal and I can do good work here."

The following is a special article on the eclipse, prepared by Father Rigge for Omaha readers:

By WILLIAM F. RIGGE.

On June 8 the United States will enjoy a celestial spectacle for which it has been waiting for 18 years, and to see which astronomers often travel half way around the earth. This is a total eclipse of the sun, when for the brief space of one or two minutes the glorious orb of day will be, as it were, blotted out of the sky, and will reveal to us the secrets of its immediate environment.

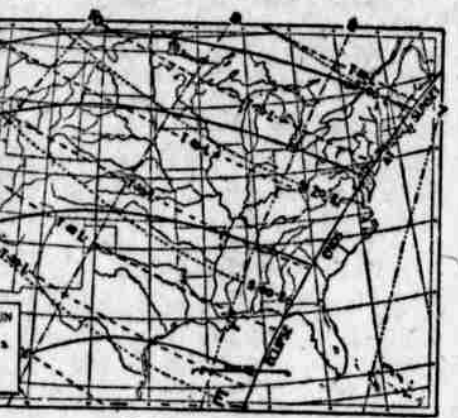
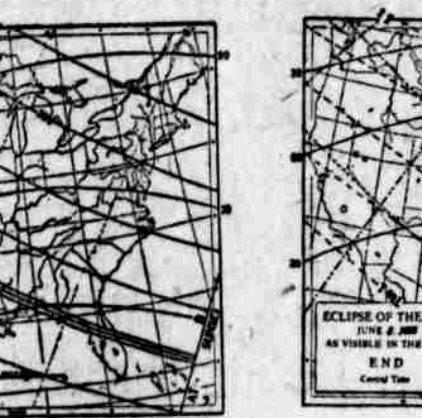
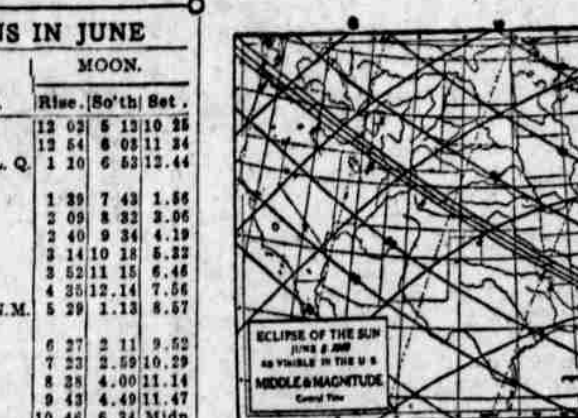
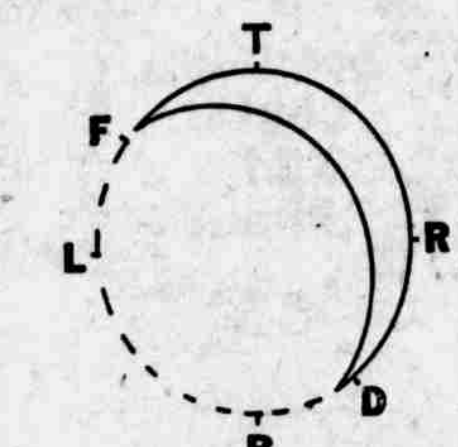
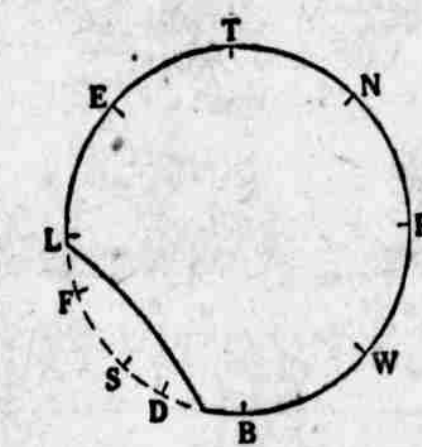
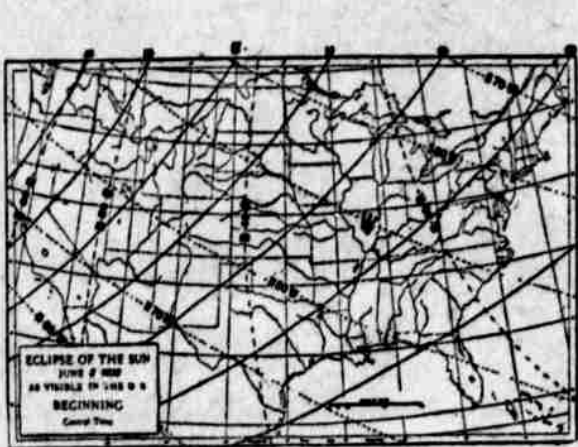
From behind the black ball of the moon, which will place itself centrally before the sun, there will appear a ring of pearly light of unvoiced splendor, in which there will be tongues of flames of scarlet, and outside and beyond which there will be the sun's corona, two opposite sets of streamers of light emanating apparently and curving away from the sun's poles, like lines of iron filings near a magnet, and uniting at the sides into broad wings which fade away gradually like auroral streamers to two or three times the sun's diameter.

Worth Long Journey.
The beauty and rarity of the sight are well worth a long journey to see. And its scientific value is not less important, for as the body of the sun is hidden from our view behind the moon, astronomers have the rare opportunity of seeing and photographing the sun's surroundings, which its intense glare always hides from our view out of times of a total eclipse. A study of these surroundings may teach us much about the nature of the sun, and the nature of the stars, for the sun is but a star like the millions that adorn our night skies, and the stars are all suns like our own shorn of their great brilliancy only by their stupendous distances.

This glorious sight of the sun totally eclipsed will be visible only over a narrow belt about 70 miles wide, which will run across the longest path we could trace for it in the United States, from the state of Washington to that of Florida. And its duration will be only from two to one minute or less.

Caused By Moon.
An eclipse of the sun is caused by the moon's passing before it. This happens only once a month, and it generally requires an hour from the moment when the moon just begins to obscure the sun's disk until it covers it completely, and it takes another hour for the moon to clear the sun again, while the period of totality cannot last more than eight minutes and is generally less than two.

While the exact moment the moon begins to indent the sun is of great importance to astronomers in helping them to correct possible errors in their tables, it is no less so to know the precise point on the sun's disk where the moon will begin to approach upon it. For this purpose we mark off the sun's circumference in degrees like a circle, and use either the general system common to all the world, of the cardinal points N, S, E, W, or the local ones of T, B, R, L, top, bottom, right, left. Both of these, together with the times are shown in figure 1, which like figures



THE HEAVENS IN JUNE

SUN.	1918.	MOON.
Rise/Noon/Set.	JUNE.	Rise/Noon/Set.
5 57 1.21.45 10-Thu.		12 02 6 13 10 25
5 56 1.21.46 11-Fri.		12 04 6 09 11 24
5 56 1.21.46 12-Sat. L. Q.		1 10 6 03 12 44
5 56 1.21.47 1-Sun.		1 29 7 43 1 56
5 55 1.22.48 2-Mon.		2 09 8 52 2 56
5 53 1.23.49 3-Tue.		3 00 9 54 4 19
5 50 1.25.50 4-Wed.		3 14 10 18 5 22
5 44 1.28.51 5-Thur.		3 52 11 15 6 46
5 34 1.33.52 6-Fri.		4 50 12 14 7 54
5 24 1.39.52 7-Sat. N. M.		5 29 1 13 8 57
5 14 1.47.53 8-Sun.		6 27 2 11 9 52
5 03 1.57.53 9-Mon.		7 23 2 59 10 29
5 01 1.59.53 10-Tue.		8 28 4 00 11 14
5 02 1.59.54 11-Wed.		9 40 4 49 11 47
5 05 1.59.54 12-Thur.		10 46 5 31 12 10
5 09 1.59.54 1-Sat.		11 46 6 16 12 13
5 12 1.59.54 2-Sun.		12 46 6 57 12 38
5 14 1.59.54 3-Mon.		1 44 7 39 1 01
5 14 1.59.54 4-Tue.		2 42 8 29 1 36
5 13 1.59.54 5-Wed.		3 40 9 28 2 08
5 11 1.59.54 6-Thur.		4 42 10 27 2 37
5 08 1.59.54 7-Fri.		5 42 11 26 3 04
5 04 1.59.54 8-Sat.		6 41 12 25 3 28
5 00 1.59.54 9-Sun.		7 40 1 24 3 49
5 00 1.59.54 10-Mon.		8 38 2 23 4 07
5 00 1.59.54 11-Tue.		9 36 3 22 4 22
5 00 1.59.54 12-Wed.		10 34 4 21 4 35
5 00 1.59.54 1-Sun.		11 32 5 20 4 46
5 00 1.59.54 2-Mon.		12 30 6 19 4 55
5 00 1.59.54 3-Tue.		1 28 7 18 5 02

card. We may even by this simple method see spots on the sun and then are present. And all the round spots of light that we see on the ground under a tree, which are real images of the sun, will, during the eclipse, show the sun's apparent shape at the moment.

PARTIAL ECLIPSE OF THE MOON.

Besides the great eclipse of the sun on the 8th, we shall be favored also with a small eclipse of the moon. This will take place on the morning of June 24. The magnitude will only be 13 per cent, as Figure 6 will show. Here N, S, E, W, are the cardinal points on the moon, and T, B, R, L, mean top, bottom, left, right. The moon will begin to touch the earth's shadow at the point F at 4:46 a. m., and leave it at D at 6:10. The eclipse will be greatest at 5:28. The moon will set at 5:59, five minutes after the sun rises.

The sun reaches its highest north

T20L show the position angles measured from the top or uppermost point of the sun towards the left. To the east of the curve marked "Eclipse ends at sunset" the sun will set before the eclipse is over. And finally the curves marked "10, 9, 8, 7, on the upper border, indicate the full hours of the central times of sunset.

Begins at 5:19.
From a study of these four figures we gather the circumstances of the eclipse as it will appear to us in Omaha. The eclipse will begin at 5:19 p. m. or more accurately, at 5 h. 18 m. 53.16 s at the Creighton observatory, at a point on the sun N 89 degrees W, or almost due west, and B 37 degrees R, 37 degrees from the bottom of the sun towards the right. The middle of the eclipse will take place at 6:25 and the magnitude will be 88 per cent. The eclipse will end at 7:25, more precisely at 7 h. 24 m. 48.42 s. at S. 74 degrees E or T. 55

degrees L. The sun will set at 8:52. Figure 5 shows the appearance of the sun when most eclipsed. The moon will first indent the sun at the point D, and leave it finally at F.

The best way to observe the eclipse will be to project the sun's image on a white card held beyond the eyepiece of a telescope. If we have no telescope at our disposal we may punch a small hole in a piece of pasteboard, hold this to the sun and then catch the image it makes on a white card at the summer solstice on the 21st at 1 p. m. Then astronomical summer begins and the day is longest, 15 hours 46 minutes, and the night shortest, 8 hours 56 minutes. The days throughout the whole month vary less than a quarter of an hour in length. Jupiter is in conjunction with the sun on the 15th. It will be very near the eclipsed sun on the 8th. Venus is morning star rising on the 15th at 3:51 a. m. Saturn and Mars are eve-

ning stars, setting on the 15th at 11:55 p. m. and 1:46 a. m. respectively. The moon is in conjunction with Venus on the 5th, with Saturn on the 12th, and with Mars on the 16th.

Head of Iron Workers Is Given Sixty-Day Sentence
W. N. Chase, 2756 South Twelfth street, president of the local union of iron workers, was sentenced to 60 days in jail on a charge of drunkenness in police court Thursday morning. Chase was arrested Wednesday night when complaint was made at police headquarters that he was attempting to sell an automobile belonging to the union.

Records Broken at Navy Recruiting Station Here
One hundred and ninety-four men enlisted in the navy at the Omaha recruiting station Tuesday. This figure sets a new record for the local station. The previous high mark for one day was 156 recruits.

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The Following Items are Concise Examples of Thrift to Be Practiced in Our Annual

June Sale of Seasonable Merchandise

Wash Skirts
Variety of Styles
\$1.25
Splendidly made in a shape-retaining way of pique and gabardine. Pockets put on at different angles and novel belts form attractive trimming ideas.

Women's and Girl's Low Shoes
in the June Sale
Choice \$2.85
INCLUDING White Sea Island sport pumps, white ivory soles and heels, sizes 2½ to 7, widths AA to D—white Nile cloth dress pumps, turn soles, Louis covered heels, sizes 2½ to 7, widths A to D—white sport shoes, white duplex soles and heels, desirable for growing girls. Complete size assortment, also broken lines of black kid, patent and beaded pumps and strap effects. Tan and black calf pumps.

Georgette Blouses
Were Up to \$6.95
\$3.95
The regular quality-standard blouses that Benson & Thorne sell year in and year out. Wide variety of styles and colorings to select from. Specially priced in the June Sale.

Wash Skirts
Another Group
\$1.50 and \$2.95
The materials include finely woven pique, gabardine, whipcord and fancy colored novelty weaves.

175 Pairs of Boys', Misses and Children's Low Shoes at \$1.95
Including boys'-tan and black calf oxfords, also patent leather oxfords, all welt sewed soles. Button and lace styles. Misses' and children's white canvas high and low shoes, patent, tan and dull strap slippers. All sizes represented, but not every size in every style. Exceptional values.

Lingerie Waists
Scores of Styles
89c
Plain and striped sheer voiles, effectively trimmed with lace, embroidery and tucks. Pretty collars and cuffs. Were up to \$1.45.

Women's Coats
Limited Number
\$19.75
Strictly tailored, belted and straightline models. Wool velour, poplin, serge and wool jersey.

Women's Wash Dresses
Two Big Groups
\$5 and \$7.95
Voiles, dimity and gingham. Light, airy summer styles far in advance of the season. Unusual values, every one.

Silk Suits
Were Up to \$5
1/3 Off
Every silk suit in the house reduced one-third in the June Sale. Semi-dress and dress styles in soft silks. Variety of colors.

150 Girls Coats
1/3 Off
Complete size assortment. Sizes 7 to 12 years and sizes 13 to 17 years for the growing girls and "little women." Black and white checks and other new fabrics—variety of this season's colorings.

Boys' Bathing Suits
Special, **65c**
Well made to properly fit the boy. One piece with skirt.

Children's Rompers
75c and 95c
Cunning beach style rompers for the little tots 2 to 6 years. Made of durable light and dark colored madras and gingham. Specially priced during our Annual June Sale.

Girls' Silk Dresses
1/3 Off
Taffetas and crepe de chine dresses in navy, tan, rose and green. Sizes 8 to 14 years and dresses to fit the growing girls.

Boys' Wash Suits
\$1.25 and \$1.50
Two specially priced groups, easily tubbed, made of light and dark madras, chambrays and twills. Long and short sleeves. Trimmed collar and cuffs.

Children's Silk Coats
1/3 Off
Silk coats for girls 2 to 6 years. Newest models and the most favored colorings of the season. Regularly \$5 to \$22.50.

Girls' Wash Dresses
\$1.25 and \$1.95
Girls' Wash Dresses
Were Up to \$5.75
\$3.50

Boys' Hosiery 29c, 6 Pairs \$1.70
Boys' Fancy Sox 25c, 30c, 39c, 45c
Lee Unionalls \$2.25
Boys' Wool Suits Special, \$6.95

Girls' Hats 1/3 Off
Girls' Dresses 2 to 6 Years 75c and 95c

The Latest Styles in Hot Weather Footwear

There is appealing cleverness in our immense offering of the season's Pumps and Oxfords, shown in all the latest styles and shades, including white Nile cloth, cravenette and kid leather. The clever creations, combined with our very attractive prices, make our offerings second to none in style, color and quality. A call at our new store will convince you.

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