A. H. FULLER, director of engineering at Lafayette College, and previously dean of engineering at the University of Washington, has been appointed head of the civil engineering department of Iowa State College at Ames, and will take up his new duties about the first of July.

DR. OTTO V. HUFFMAN, who has resigned as dean of the Long Island College Hospital and has resumed practise in New York City, has been appointed a member of the faculty of the New York Post Graduate Medical School and Hospital in the department of internal medicine.

PROFESSOR F. B. ISELY, of Central College, Fayette, Mo., has accepted the position of dean and professor of biology at Culver-Stockton College, Canton, Mo., and will begin work in June.

AT Yale University instructors have been appointed as follows: Leonard H. Caldwell, in engineering drawing; Arthur H. Smith, in physiological chemistry; Wilbur Willis Swingle, in biology; J. H. Fithian, Jr., and Howard B. Meek, in mathematics.

MR. JOHN B. FERGUSON, formerly of the Geophysical Laboratory, of the Carnegie Institution of Washington, and now a member of the research department of the Western Electric Company of New York City, has accepted a position as associate professor of chemical research at the University of Toronto.

DR. J. H. ANDREW, chief of the Metallurgical Research Department of Sir W. G. Armstrong, Whitworth, and Co., Manchester, has been appointed to the chair of metallurgy in the Royal Technical College, Glasgow, vacant by the transfer of Dr. Desch to the University of Sheffield.

DISCUSSION AND CORRESPONDENCE

THE AURORA OF MARCH 22, 1920

THE bright aurora of March 22 was first noticed at Urbana about 7:00 P.M. It must have developed quickly, for I had glanced over the entire sky looking for clouds at 6:45, without noticing anything unusual. Soon after 7:00 the illumination was covering more than half of the sky but it was a couple of hours before the streamers were well marked near the magnetic zenith. This aurora was the longest in duration I have ever noticed at Urbana, as it was followed continuously from 7^h to 13^h, and observations of the apparent radiant were made at times during two hours. My assistant, Mr. C. C. Wylie, was also watching the display from a position a quarter of a mile distant from the observatory, and our independent estimates of the apparent radiant or focus of the streamers high up in the south, are given in the table. The times are Central Standard Time, 6 hours slow of Greenwich Mean Time.

C. S. T.	Declination	Hour Angle	Observer	Remarks
9^h 05^m	20°.8	+4°.0	S	
9 08	21.3	+3.8	S	
9 22	20.6	+1.2	S	
9 25	19.0	+1.1	W	Fair
10 05	20.4	−4.8	W	Fair
10 09	20.7	+2.5	S	Fair
10 21	19.6	+3.0	S	
10 22	22.3	+2.0	W	Good
10 25	20.0	+2.8	S	Good
10 34	20.7	+0.2	S	Good
10 55	21.0	−1.6	W	Good
11 12	20.5	+1.5	S	Fair
11 12	19.1	+0.0	W	Good
11 18	20.5	+0.2	S	Fair
Mean of S's	20°.5	+2°.1		
Mean of W's	20.4	−0.7		
Mean of all	20.5	+1.1		
Magnetic zenith	21.2	+1.1		
Difference	0.7	0.0		

The mean of all estimates differed by only 0.°7 from the magnetic zenith, as defined by the magnetic elements for Urbana determined by Mr. Merrymon of the Coast Survey in 1917. This agrees with previous results.[1]

The auroral light interfered with our photometric observations at the telescope that evening, because of the variable bright sky background for any star. A few rough measures gave the result that a patch of auroral streamer equal in apparent area to the full moon gave about as much light as a second

[1] SCIENCE, 47, 314, 1918.

magnitude star. This refers to the blue light which most affects the photo-electric cell, which is not very different from the photographic plate in color sensitivity.

Joel Stebbins
University of Illinois Observatory

THE RECENT AURORAS AND SUN SPOTS

The object of this preliminary communication is to call attention to the coincidence with the recent magnetic displays of a huge disturbance on the sun approximately parallel to the sun's equator and over 205,000 miles long so situated that the whole of it approximately passed centrally requiring at least two days for its passage over the sun's center. The group of spots consisted of at least six larger and numerous smaller ones, all stringing along in a line. My first observation of it was on the 23d of March when most of the group had already passed the center by about a day. If the group existed prior to the 23d without essential modification, it began to pass the center between the 20th and 21st, showing a lag in the propagation from the sun to the earth, if there be such, of something like two days. This seems to favor Professor Snyder's recently announced statement that there is a lag of 48 hours. The observation seems at least to point to the fact of there being some kind of propagation. The central passage required about two days and the aurora was evident on the evenings of the 22d and 23d at least.

Again on the 16th of April a medium-sized spot became central. It was probably one of the six spots of the before mentioned group. It was followed by a small spot some 200,000 miles after and also central about two days later. It was possibly another remnant of the old group, but too small to be of any consequence. It had disappeared by the 19th. Two or three days before the medium-sized spot became central, I remarked to several of my colleagues that I would not be surprised at auroral display or at least magnetic disturbances after it passed the center. I saw no aurora, the sky was unfavorable, and probably also the time, but on the morning of the 17th telegraph operators noticed a disturbance, which must have been due to the alleged propagation. If so the lag was about one day in this case.

My measurements of the positions of all the spots were made on the sun's disc directly with the micrometer and will yield heliographic latitudes and longitudes of all the points observed, but I have had no time to make the computations. I would wish this communication to be considered as a first approximation to more accurate values.

E. D. Roe, Jr.
Syracuse University,
April 24, 1920

POSSIBLE CONNECTION BETWEEN SUNSPOTS AND EARTHQUAKES

In Monthly Notices of the Royal Astronomical Society for April, 1919, Professor H. H. Turner has discussed data taken from the Catalogue of Destructive Earthquakes compiled by Milne and from the Catalogue of Chinese Earthquakes. He publishes tables of earthquakes extending back to 49 A.D. and refers to old Chinese records dating to 1820 B.C.

From these data he slightly modifies two suspected earthquake periods, first published in the Report of the Seismological Committee to the British Association in 1912. The short period is shown by him to have minor and major limits of 14.8421 and 14.8448 months. The long period is taken as seventy-eight years. His tables show these periods almost certainly as real.

Nine times the limits of the short period give 11.1316 and 11.1336 years. Newcomb has derived the sunspot period as 11.13 years and Larmor and Yamaga as 11.125 years. The chance that this close commensurability is accidental is as the difference, which is less than one one-hundredth of a year, is to the period of about 1.24 years. That is about one in two hundred and fifty.

If the short period is so nearly commensurable the long period must be also. Seven times the sunspot period is 77.91 years, agreeing to 0.09 years with his round figure of seventy-eight years.