Of importance to scientists everywhere is the possibility that the famous super-heavy element number 93 of Professor Enrico Fermi, may be an isotope of protactinium. Personally, Dr. Von Grosse said, he believes this to be the case.

The work of isolating protactinium was begun three years ago, when three tons of radium residues were imported from the world's oldest radium factory at Joachimstal, Czechoslovakia. From a ton of these residues and at a cost of $5,000, Dr. Von Grosse obtained one-tenth gram of pure protactinium while working with M. S. Agruss.

A tiny sample of the rare substance was exhibited to chemists in Cleveland, Ohio. It is a thin coating of proactinium on tungsten wire and sealed in a glass bulb. A magnifying glass is needed to see it.

Dr. Von Grosse is but 29 years old, born in Riga, Russia, reared in Shanghai, where his father was Russian Consul, and educated in Berlin at the Institute of Technology, where he won the degree of Doctor of Chemical Engineering in 1927.

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METEOROLOGY

Autumn Hurricanes Fewer After High Summer Barometer

HURRICANES, that in autumn months come swooping out of the Caribbean to devastate coastal towns of the Southeast and Gulf States and harry the shipping off the Carolina capes, will be fewer in number this season. At least, this prophecy will hold good if the correlation between summer barometric pressures and autumnal tropical storms over the Antilles worked out statistically by Clifton L. Ray of the San Juan, P. R., office of the U. S. Weather Bureau remains as valid as it has in the past.

Mr. Ray's studies have been based on summer barometric pressures over Puerto Rico and the incidence of storms over the "too-oft-hurricanoed" isle. But he adds, "The results, while referring only to the Eastern Caribbean, are generally applicable to the entire area, including the Gulf and Central American waters."

The "North Atlantic high" is a familiar fixture on summer meteorological maps. Each year, as the sun reaches its farthest north, a large, stubbornly stationary area of high pressure develops, centering in the general region of the Azores islands. It hangs over the ocean until at least the end of July, and its autumnal break-up is usually the signal for the procession of tropical storms, frequently of hurricane intensity, to begin marching in through the Caribbean and thence either over the Gulf or up the South Atlantic coast of the United States.

Mr. Ray has found that when the summer pressures due to this "high" are persistently above normal, there is 73 per cent. probability that autumnal tropical storms will be fewer than normal. Conversely, when the summer pressures are lower than normal, more than the usual number of tropical disturbances can be expected to follow.

Calling attention to the fact that during the present year the oceanic "high" has had pressures decidedly in the upper brackets ever since April, Mr. Ray suggests that it will be of interest to observe the outcome of the present season. Thus far there has been only one tropical storm in the Eastern Caribbean area.

Mr. Ray will discuss his results in a communication to be published in a forthcoming issue of the *American Meteorological Bulletin.*

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ASTRONOMY

Flight of Solar Bomb Shown in Motion Pictures

MOTION pictures of a huge "bomb" about 25,000 miles long that shot out from a sunspot on June 19 and then exploded above the solar surface were shown to members of the American Astronomical Society meeting at Connecticut College. The films were made by Robert R. McMath and R. M. Petrie, at the McMath-Hulbert Observatory of the University of Michigan. This is an observatory established by a group of devoted, though non-professional, astronomers especially for taking astronomical motion pictures.

The pictures displayed were the first results shown of the work of the "spectroheliocinematograph," an attachment for the telescope which permits motion pictures to be made of the sun in the light of a single wavelength. The light of glowing hydrogen is normally used, so that the films show the distribution of that element in the sun's atmosphere.

When projected at the usual rate the motion is speeded up about 450 times. Thus changes that would have taken many hours to observe while watching the sun are shown in a few minutes.

According to Mr. Petrie, the sunspot had been under observation for several hours, when a long, dark, wedge-shaped cloud suddenly formed, projecting outwards. It swept out at a calculated speed of about 25 miles a second, and after about 12 minutes it disappeared, leaving near it a dark stream, perhaps some of the same material, which was sucked into the spot at a speed which increased to about 200 miles a second.

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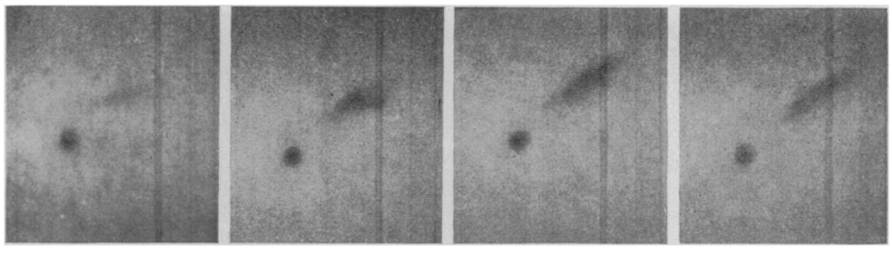

A SOLAR BOMB

Recorded by the light of hydrogen on motion picture film, this emission of a "solar bomb" from a sunspot was made available for the leisurely study of astronomers by scientists at the McMath-Hulbert Observatory of the University of Michigin. The frame at the left shows the sunspots at 2.27.30 p. m., Eastern Standard Time, just before the appearance of the bomb. The next, taken 4 minutes, 10 seconds later, shows the dark mass just after its ejection. The next, taken 2 minutes, 5 seconds after the second, shows the bomb moving away from the spot and becoming indistinct. Finally, the last frame, taken 2 minutes, 30 seconds after the third, shows what may be the same mass of gas reentering the spot.