

# “Artificial Skies” Show Southern Stars

*Astronomy*

As the fliers of the Southern Cross winged their way southwards over the Pacific at night, the familiar stars of our skies dropped behind the northern horizon. In their place there arose in the south constellations we never see, including the original Southern Cross, after which their plane is named.

By this time next year, Chicagoans will be able to see this effect themselves without leaving their city. Then there will be in operation the first planetarium in the western hemisphere. This is a remarkable German optical device, which portrays, on a white dome, the stars and planets as seen from any part of the earth at any time. Max Adler, former Sears-Roebuck official, has just given \$500,000 to the city for one of these instruments and the building to house it. An island in Lake Michigan, near the Field Museum, has been selected as the site.

Mr. Adler will shortly leave for Germany to study the instrument at Jena, home of the Carl Zeiss Optical Works where it is built, as well as other German cities, and will personally supervise its erection in Chicago.

With the vanguard of the thousands of American tourists who will visit Germany during the coming months now reaching Berlin, the planetarium there is attracting large crowds.

Since the first planetarium was erected in 1924 in Jena, on the roof of one of the buildings of the Zeiss works, fourteen other German cities have installed them, including Munich, Berlin, Hamburg, Hanover, Düsseldorf, Barmen, Leipzig, Stuttgart, Nürnberg and Mannheim. One has been installed in Vienna; Mussolini has ordered one for Rome, which will be opened this fall; while the Soviet government has also ordered one for Moscow, paying cash in advance.

The planetarium is a huge instrument, consisting of a long cylinder, with two spherical ends. Imbedded in the spheres, and also along the cylindrical parts, are a number of lenses, 119 in all. These act as magic lanterns to project the images of the naked eye stars, the Milky Way, the Sun, Moon and planets on the white cloth-lined dome. So rea-

listic is the effect that when the room is darkened and the visitor has become used to the dim light, the stars appear as in the actual night sky. The visitor does not seem to be in a 90 foot dome, but under the stars themselves on a cloudless night.

The mechanism of the machine, all controlled by the lecturer from a single switchboard, will enable it to reveal the stars as seen from the north pole, the south pole, or any place between. The “great year,” of 26,000 ordinary years, can be duplicated in a few minutes, and the heavens shown as they appeared thousands of years ago. Five thousand years ago our present pole-star was not in that prominent position, but it was occupied by the star we call alpha Draconis. At that time also, the Southern Cross was visible from the present latitude of New York. This can be shown with the planetarium. When desired, the names of the constellations can be flashed on the sky in the proper places, as if on huge electric signs!

The phases of the moon as it spins around the sun, along with the earth, are dis- (Turn to next page)

# Buildings Burned to Test Safes

*Engineering*

Two buildings, one five stories high, in the heart of Washington, and within less than a mile of the White House, were burned to the ground early Sunday morning, June 17, while firemen stood by and watched. No effort was made to save the buildings, though they contained large amounts of lumber and other material, as well as 35 safes filled with records. The fire was started by S. H. Ingberg, Bureau of Standards scientist, but, although police were present, no effort was made to arrest him for arson.

This unusual fire was made as a scientific experiment, part of a series made by the fire protection section of the Bureau of Standards, of which Mr. Ingberg is in charge. Previous tests have been made in a large concrete chamber of the bureau, but never before has it been possible to make a careful study of conditions at a full-size fire, for which preparation had been made months in advance.

With the demolition of many old

buildings in Washington, in the triangle south of Pennsylvania Avenue, in order to make way for the government's extensive building program, the idea was conceived of burning one or more as an experiment. Thus the expense and trouble of wrecking them by the ordinary means was saved, and at the same time data of great value to manufacturers of safes, engineers, and architects have been obtained.

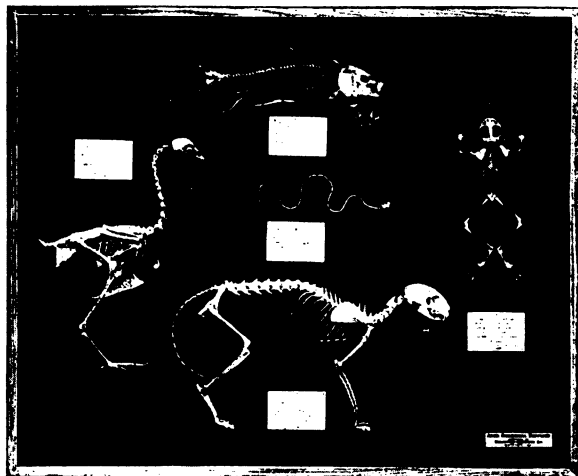
The two buildings were at 1007 and 1009 Little B Street, opposite the north side of the National Museum, and between the Capitol and the White House. One was two stories high, 22 feet wide and 75 feet deep, while the other was five stories high and 30 by 75 feet deep. Both had brick walls, and open joisted wood floors, about an inch thick, and very few partitions. The elevator shafts were open and the stairways inadequately protected. According to the Bureau officials they were typical of the non-fire resistive type of structure built some years ago, and still very

common in American cities. Until last fall they had been used as warehouses.

All the surrounding buildings had been completely demolished several months ago. The two under test were loaded with waste lumber and such material, the weights varying from 7½ to 30 pounds per square foot of floor area. Thirty-five safes, submitted by various manufacturers, were placed at different locations in the buildings. These were numbered inside the doors to permit of identification. They were filled with useless records, so as to determine the degree of protection that they afforded. Each safe also contained a thermometer to record the highest temperature within during the fire, and a clock arranged to stop with a heavy jar. These give records of the time at which each safe fell through the burned-out floor to the ground below.

Mr. Ingberg and his associates observed the fire from a “dugout” in an old boiler room nearby. By means of thermocouples (Turn to next page)

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## Planetarium—Continued

played. So are the motions of the planets. These can be speeded up so that the events of a year take place in a few seconds. The sun speeds across the dome with Mercury and Venus looping around it. The alternate forward and backward motion of Jupiter and Saturn, hardly visible in reality because of their slowness, become immediately apparent. Yet so accurate is the mechanism, that if the planets are shown as they will appear 5,000 years hence, Mercury, the fastest moving of them, is out of its proper place less than the diameter of the full moon.

Most of the German planetariums are operated by the school boards of the respective cities, but for general visitors, an admission charge of one mark is usually made. Despite this, the popularity of them has been so great that in the four years since the first one more than a million paid admissions have been recorded in Germany. This has gone far towards paying the cost. The instrument itself sells for about \$40,000, and the cost of the building is from about \$150,000 upwards.

Science News-Letter, June 23, 1928

## The Emigrant

Cosmogony

LUCIO, in Manchester (England),  
Guardian Weekly:

["A simple proof of it (i. e., the drift of the earth's great continental masses) is to compare the eastern shape of the two American continents with that of the European and African shores of the Atlantic. The two will be found to fit into each other like the dovetail-work of a joiner, promontory into gulf and gulf into promontory, showing that at some remote geological period the Americas and the Old World formed a single land mass from which the double American continent has drifted away."—From a news article of the week.]

At school they used to blame Lord  
North

For lost Amerikey;  
He drove, they said, the settlers forth  
Determined to be free.  
But, lo! the breach was not evolved  
From any British shift—  
Their land had long before resolved  
To cut itself adrift.

And, why should it have crossed the  
foam

And steadily gone West?  
If it had quietly stayed at home  
It had been for the best;  
No quarrels had been then unmasked,  
All neighbours we should be,  
And any time we might have asked  
"Bill" Thompson in to tea!

We should not then have had to learn  
Our slang from books or plays—  
We should have grasped its newest  
turn

In daily talk and phrase,  
For Coney Island and its shows  
Would be as near as France—  
And little old Noo York, I s'pose,  
A suburb of Penzance.

We might have sat all movies through  
And found no point to vex,  
For nothing Hollywood could do  
Would baffle or perplex;  
The lingo and the manners then  
Had been at our command,  
If we had all been fellow-men  
In one united land.

Ah me! what consequences flow  
From that disastrous day  
When both Americas let go  
And slowly sailed away!  
With what dissensions newly stirred,  
That fatal day was packed  
When history's biggest split occurred  
And half the globe went cracked!

Science News-Letter, June 23, 1928

## Fire Test—Continued

placed in open spaces at 50 advantageous points within the burning buildings, and at 45 points in the debris, connected by wires with instruments in the dugout, the temperatures were measured electrically.

Only newspaper men, firemen and policemen and others immediately concerned with the work were admitted. As the fire was started at 5.30 A. M., most Washingtonians were still asleep while it was taking place, and did not learn of it until it was over. The alarm had been received by the fire department long before it started, so companies, with apparatus, were stationed at several points near the National Museum, the Postoffice Department Building, and other nearby structures to prevent any possibility of other fires being started by burning brands.

An estimated maximum temperature of 3600° F. was reached at the height of the fire. As no water was put on, temperatures as high as 2000° F. were recorded 12 hours after the fire was started.

Science News-Letter, June 23, 1928