same distance — about 12 degrees — along this line. In March it happens that when the full moon is rising the ecliptic makes a very steep angle. Thus, the moon's daily motion takes it well below the horizon from one day to the next and thus causes the maximum difference in moonrise.

In September, on the contrary, the ecliptic makes a low angle with the horizon, and the moon's daily motion does not take it much farther below. It does shift it toward the south, and causes a considerable difference in the point of the horizon where the moon rises, but there is a minimum delay in the time of rising. In October, conditions are nearly the same, and again there is little daily difference. This is called the hunter's moon.

Time Table for September

Sept.	EDST	
2	9:04 a. m.	Moon passes Saturn
	12:00 p. m.	Venus farthest west of sun
3	2:00 a. m.	Moon nearest, distance 222,000 miles
	7:21 a. m.	New moon
6	5:51 p. m.	Moon passes Mars and occults it
10	3:05 a. m.	Moon in first quarter
	8:34 a. m.	Moon passes Jupiter
16	7:00 a. m.	Moon farthest, distance 252,400 miles
18	5:53 a. m.	Full moon
22	11:22 p. m.	Sun crosses equator, autumn commences in northern hemisphere
25	6:00 a. m. EST	Mercury farthest east of sun
26	12:07 a. m.	Moon in last quarter
29	8:04 a. m.	Moon passes Mercury
	11:35 p. m.	Moon passes Saturn

Subtract one hour for CT, two hours for MT, and three for PT.

Science News Letter, August 21, 1948

ELECTRONICS

Machine Plays Chess

➤ A MACHINE now can solve business problems, write your letters or play you—and beat you—in games of gin rummy or chess.

The "thinking machine" costs approximately $175,000, not counting what you will lose if you play gin rummy against it.

UNIVAC, the universal automatic computer, was described at a symposium on modern calculating machinery held at the University of California at Los Angeles by Dr. John W. Mauchly, who together with J. P. Eckert of the Eckert-Mauchly Computer Corporation, Philadelphia, designed the machine.

Feed the machine a form letter along with instructions on how to write it and personalized letters, no two alike, will roll out of UNIVAC in an endless paper parade.

It plays chess and gin rummy so perfectly that no human opponent has a chance against it.

In a more serious mood it can work on statistical analysis, business problems, classification of weather observations and complex aeronautical problems. It can solve tricky problems of traffic control over airports.

In speed, flexibility and versatility it surpasses earlier calculating machines, declared the scientists.

The earlier ENIAC was pretty smart but the UNIVAC is even smarter. The ENIAC, which was also designed by Dr. Mauchly and Mr. Eckert, could store in its internal memory 20 numbers of 10 digits each and could multiply these numbers 300 times a second. UNIVAC can store 1,000 numbers of 12 digits each in its vastly improved memory and can multiply them 500 times a second.

It is the first machine which can take instructions along with the numbers fed to it and can even change its own instructions. Coded instructions are fed into the machine on slim reels of magnetized tape.

This "thinking machine" is smaller than any of its predecessors. It measures only three by eight by six feet while ENIAC has 40-foot panels eight feet high. This new compactness is made possible by more efficient design which requires only 1,500 vacuum tubes as against nearly 20,000 for ENIAC.

UNIVAC is scheduled for delivery within the next 18 months.

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