



Destination **THE MOON**

By William E. Howard

Which Way to the Moon?

All of spaceflight is arranged in one essential—rocket power.

The weight-lifting ability, or thrust, of a rocket engine, previously how many kilograms may be placed into orbit around the earth or sent toward the moon or one of the planets.

When the late President John F. Kennedy launched the Apollo lunar program in 1961, only one large rocket was being developed in America, the Saturn I. This is a two-stage vehicle. The multi-segment first stage has the power of only 675,000 kilograms of thrust, more than four times that of the Atlas booster which orbited men in Mercury spacecraft.

NASA also had under development a rocket engine, the F-1, with a thrust of 675,000 kilograms, but equalled the combined thrust of the eight segments of the Saturn I first stage.

It was quickly established that Saturn I, which can lift 10,125 kilograms into orbit around the earth, was too flimsy for the Apollo task. Something much more powerful was needed. The answer was to cluster five

For centuries visionary men have gazed their eyes to the beauty of the moon in the night sky and wondered if it could be reached. Now, finally, the herculean task of exploration is well under way.

