search a person or even his luggage without a warrant." And some people are licensed to carry weapons, although they are required by law to check them with the flight crew.

Then there's the ticklish problem of what to do when a passenger walks past a device and the alarm goes off. Since the ticket agent cannot be authorized to take the passenger aside and search him, this means an armed guard at every gate.

The airlines could get around the searching problem by asking an individual who sets off the alarm to empty his pockets voluntarily and then walk past the device again to make sure the gun isn't hidden in his clothing. Any suspect passenger who refused could legally be kept off the aircraft. But false alarms would cause a nightmarish customer relations problem for the airlines. And if the passenger is in fact planning a hijacking, he is liable to be highly dangerous.

Finally, there is the problem of economics. Since one detection device would have to be installed at every boarding gate, cost is a major consideration. "If money were no object," says FAA engineer Max Collins, "it might be possible to develop a reliable device with several sensors, an image recognition unit and a computer. But you could hardly afford to put one at every boarding gate."

One way to circumvent the cost problem would be to put detection devices at every fifth or tenth gate, and then to post signs at all boarding gates to the effect that passengers are being searched for weapons by hidden electronic devices. This approach would be similar to the use of "speed checked by radar" signs posted along certain highways.

In spite of all the obstacles, the FAA and the ATA are continuing to look for solutions, primarily for more reliable detection devices. Until such time as an inexpensive, almost foolproof gun detection device is available to the airlines, their present policy of accommodating hijackers will no doubt continue. For the immediate future, the best hope for the hijacking problem is still that it will simply go away, perhaps by the resumption of normal relations with Cuba.

Castro, meanwhile, has made it known that he strongly disapproves of the hijackers who have been diverting planes to Cuba. In fact, several of the hijackers have been jailed, according to Moises Pérez, an official of Cuba's Ministry of the Interior. Pérez adds, however, that "some of the hijackers have been released after showing the proper revolutionary attitude." Pérez says it is unlikely that hijackers would ever be regarded as revolutionary heroes.

MASCONS

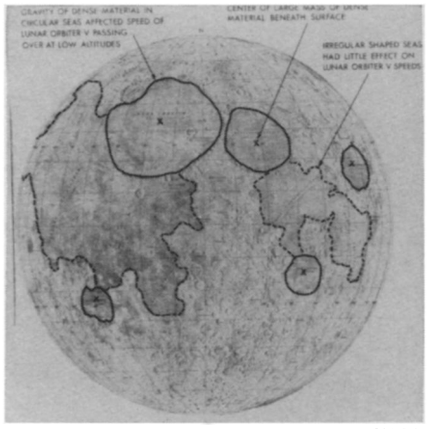
Lumps beneath the maria

The moon may have relics of ancient collisions with heavy bodies buried beneath the surface of its maria. So conclude Drs. P. M. Muller and W. L. Sjogren of the Jet Propulsion Laboratory of California Institute of Technology, who have used lunar orbiter tracking data to make a gravimetric map of the near side of the moon.

The force of gravity is not uniform over the surface of the moon—or the earth for that matter—but varies slightly according to the density of the matter below a particular spot. As it moves across the face of the moon, the orbiter responds to these changes in force by slight variations of its motion. Analysis yields the gravimetric data.

There appear to be concentrations of dense matter—or mascons, as the observers abbreviate mass concentrations—under six of the nearside maria —Imbrium, Serenitatis, Crisium, Nectaris, Humorum and Orientale—and in the area between Sinus Aestuum and Sinus Medii.

The maria are flat areas sometimes ringed with ridges, and their appearance has led some observers to suggest that they may have been caused by collisions with heavy bodies. It could be, say Drs. Muller and Siogren, that the mascons are the impacting bodies buried beneath the lunar surface—the one in Mare Imbrium, for example, would roughly equal a nickel-iron sphere 100 kilometers in diameter.



NASA

Mass concentrations on the moon.

Whether the mascons actually are asteroidal-sized bodies that caused the associated maria by impact is a question the Caltech researchers present for future study. If the mascons are not simply the original impactors, they say in the Aug. 16 SCIENCE, then one must find out how they were formed in the lunar interior. Another question is whether the mascons are consistent with the notion that the moon has a molten interior.

SPECIES DIFFERENCES

Chimp study shakes theory

Rhesus monkeys reared in isolation never learn to copulate. Chimpanzees reared in isolation do.

Although the chimp never becomes quite normal, given time with an experienced partner, a chimp can at least learn the techniques of becoming a parent, while a rhesus monkey, except for the rare female, remains completely inadequate.

Human psychologists, extrapolating from animal behavior, consistently fail to appreciate the magnitude of species differences. In this case, the classic experiments on the long-term effects of isolation on rhesus monkeys, by Dr. Harry F. Harlow in Wisconsin in the 1950's, have influenced a generation of psychologists.

Dr. Harlow's monkeys were permanently impaired socially and sexually by their early isolation in wire cages. The males would attempt copulation, but without success. The females retreated from bigger experienced males and, in rage, attacked the smaller ones. When four females were eventually impregnated by patient partners, they became terrible mothers, abusing their offspring and refusing to let them nurse.

The behavior of the rhesus monkeys ranged from cowering fear, to stereotyped motion, aggression and self-mutilation.

Animal behaviorists reacted to this information with: "Well, isolation certainly ruins a rhesus monkey." But to the public and many psychologists, jumping further than the animal behaviorists would, the parallels to human behavior were provocative.

New results on chimpanzees from Yerkes Primate Center in Atlanta, Ga., leaves untouched the basic theory that social isolation damages behavior. But it shows the extent of that damage and the form it takes to be quite specific to the species involved.

Of 12 chimpanzees reared for three years in closed boxes, eight later learned sexual behavior from wild-born animals.

This represents considerable recovery, although the animals are still abnormal in duration and frequency of sexual activity. Often their copulation is interrupted by a sudden access of stereotyped repetitive motion, says Dr. Charles M. Rogers, co-author of the