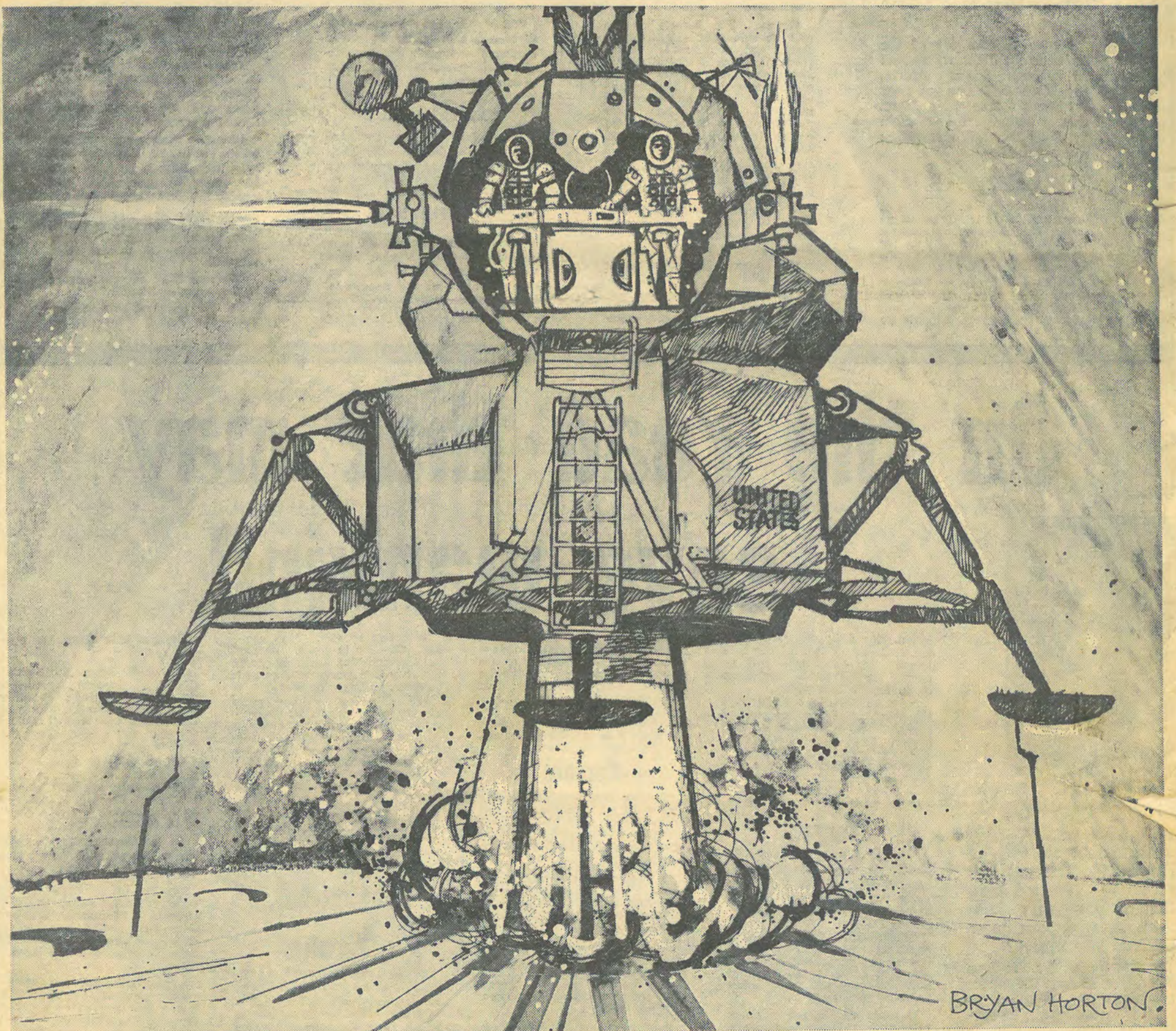


# MOON MAIL

EDITED BY ANGUS MACPHERSON

## What has four legs, is 23ft high and costs £17 million?



THE APOLLO 11 round trip to the Moon will cost £145 million.

Of this £80 million is spent on the 260ft. Saturn rocket, £23 million on the 33ft. Command and Service Module which is the astronauts' living, working and sleeping quarters for eight days and also its 'power pack' with fuel tanks and main engine. The four-

legged Lunar Module, which will stand 23ft. high when it lands on the Moon, costs £17 million.

And the U.S. Defence Department will spend £25 million on the 6,865 men, 54 aircraft and nine ships which will be spread around the oceans of the world to complete the quarter of a million mile radio links between the spacecraft round the Moon and the

Mission Control at Houston, Texas. America's Moon programme has cost £12,000 million—not quite double the £7,000 million bill estimated when President Kennedy first set the Moon as a national goal in 1961. The bill is staggeringly low. The annual budget of the Moon programme has amounted to little more than Britain's defence bill.



# I report from the top of Apollo 11

CAPE KENNEDY, Wednesday

TODAY I climbed 320 feet to the most closely guarded spot in America—the top of the Apollo 11 Saturn rocket that a week from today will launch three men to the Moon.

I rode to 'the top of the tower' in the lift in which Neil Armstrong, Edwin Aldrin, and Michael Collins will next Wednesday take their 25sec. ride to enter their 11ft. cabin in which they will ride to the Moon and back.

## Limpets

Green-painted on the outside, grey and a little tatty-looking inside, the lift climbed through the red lattice of girders in the servicing tower alongside the white cylinder of the Saturn 5.

At the 320ft. level, I shook hands with 35-year-old 'Chuck' Henschel, test supervisor and boss of the 500 men who will be

working on the rocket during its final check which will start on Thursday night.

Clamped like limpets to the rocket's side were the surgically clean, air-conditioned 'white rooms' in which 50 technicians are giving the final touches to the spacecraft carried in the top of the rocket—the astronaut's cabin and the fragile, spidery-legged lunar module which will actually land on the Moon, with Armstrong and Aldrin aboard.

'We're confident we shall get the Moonshot off on time,' Henschel said.

'Every man here feels part of it—and feels also that this is what he has been working towards for years.

'Of course, their wives don't always see it that way.

'The women don't see why their men should spend so much time working out here. The men rather

ANGUS MACPHERSON AIR AND SPACE CORRESPONDENT

IS AT CAPE KENNEDY FOR NEXT WEEK'S MOONSHOT.

HE CABLED THIS REPORT TO THE DAILY MAIL LAST NIGHT

think their home life should be run in the same rigid way as the countdown.

'So we do have a very high divorce rate, I'm afraid. But we're hoping that's going to improve after next week, like a whole lot of other things.'

## Balloon

We talked against a fierce hissing noise—the tubes that keep the mechanics' aerial workrooms air-conditioned and also help to keep the thin aluminium walls of the 363ft. rocket upright and rigid.

The rocket weighs only 200 tons against the 6,000 tons it will weigh when pumped full of nearly a million gallons of fuel needed to boost it Moonwards.

Until it is ready for its fuel of

liquid hydrogen and oxygen to be pumped in a few hours before blast-off, the Saturn must be partially pumped up, like an aluminium balloon, with inert nitrogen gas.

Passes are closely scrutinised before one is admitted to the top of the tower on which so many hopes and 300 years of man's dreaming are now resting.

Not only every man who goes up the tower—but also every tool, every nut and bolt he takes with him—must be checked in, and equally important, checked out.

'It's a little like a surgeon counting all his scalpels and swabs to make sure he hasn't left any behind inside the patient,' said Henschel.

'We sure don't want a spanner in the works—literally.'

Did he get any gate-crashers inside the Apollo compound—

any sightseers, or just plain nuts?

'Yeah, a few. Mainly inadvertently. They seem to get on to the pad somehow from time to time. But no one's ever got on to the rocket that shouldn't have been there.'

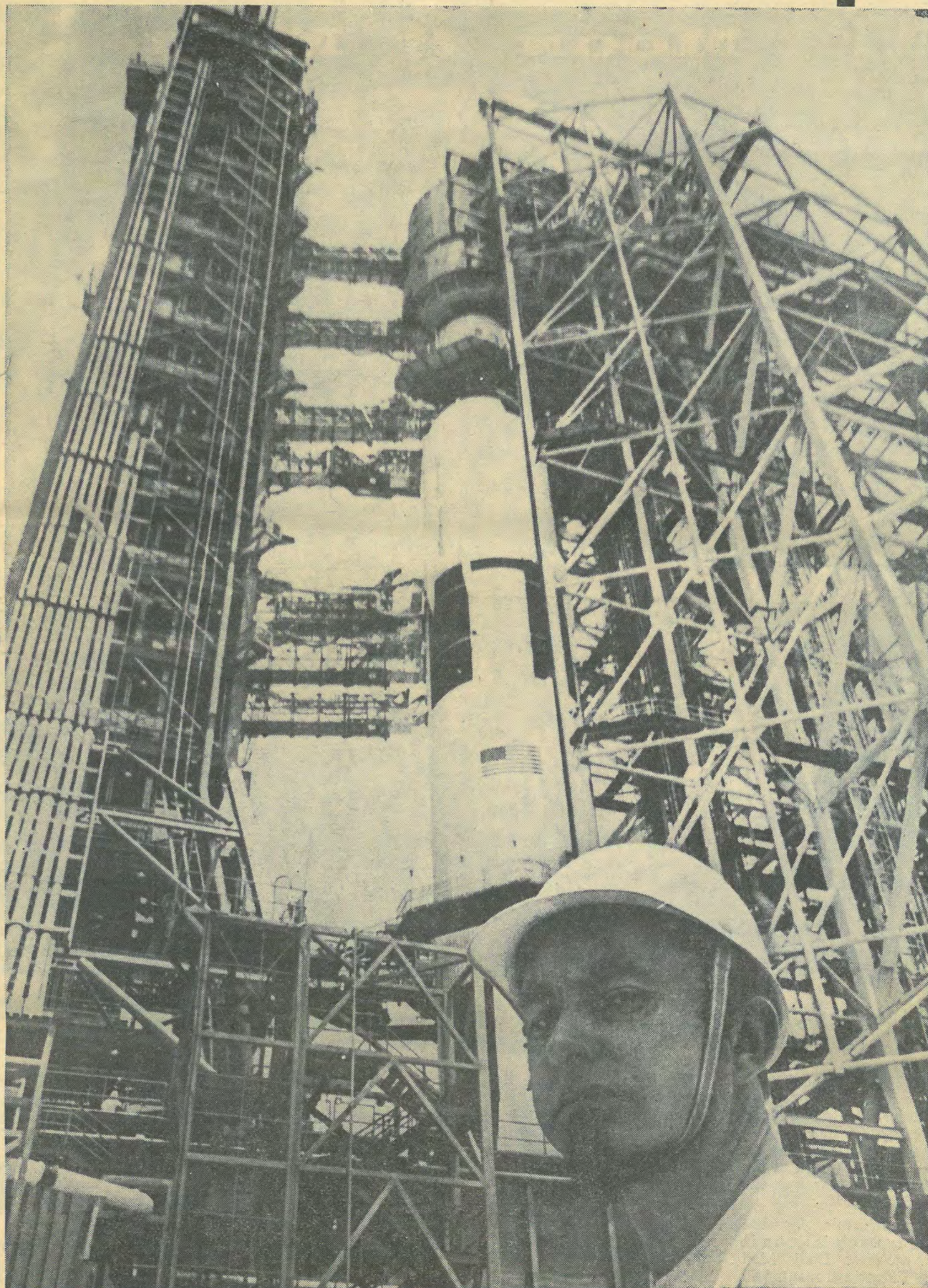
Behind us as we talked was the emergency lift in which three astronauts could shoot down into a concrete blockhouse buried beneath the pad if the million gallons of fuel caught fire during the countdown.

## Safety

Also, the open cable car in which the Moon men and the five men who help to strap them into their capsule could make an even quicker ride to safety down a 700-yard slide wire.

Behind again, lie the flat swampy palm and orange groves and the white-fringed Atlantic shore that will be the astronauts' last view of the Earth as Earthmen.

When they set foot on it again, Man will have a new colony in space and they will be the first returning space explorers.



Angus Macpherson in safety helmet before he went to the top of the Saturn rocket.

Picture by RONALD FORTUNE.

# On the road that may save mankind



DR. PAINE  
New ways, new sciences

BUT what does it mean to the man in the street? How will it change the life of Mr Average Man that a few very non-average men can now walk on the Moon?

I talked to Dr Thomas Paine, boss of America's space administration, N A S A — nuclear physicist, ex-submarine officer.

Behind the shy, friendly manner and the horn-rims are the cool eyes of a man used to weighing lives against the risks and rewards.

Above him, the famous photograph of Earth-rise from the

Moon, signed by the three men he sent on a half-million-mile journey last Christmas and so opened the way to the touchdown in the Sea of Tranquillity.

Now he is in no doubt that the Moon is only a first step—a voyage to an offshore island that happens to be conveniently close. The real target—the planet Mars, 40 million miles farther on, where two unmanned U.S. satellites will take a close look only days after men get back from the Moon.

## Target

'We are opening a road to the planets—a road that man will take. I think people dimly perceive that this is something of great importance to humanity—indeed to life.

'When the first European explorers came to the New World, one of the things that happened was that a whole new form of government evolved that has affected every modern nation.

'I think it's not too much to expect that we'll see this in space, too. I would guess that there will be whole new ways, new philosophies, new sciences.

'New ways, for instance, of men banding together to work on the Moon—or on the planets—that may be very different from anything we have on Earth.

'The Moon is just as capable of supporting life—with modern technology—as North America was of supporting the Pilgrim Fathers. And, incidentally, that was a touch and go thing. . . .'

Dr Paine fully expects to see both America and Russia set up colonies—at least of scientists and explorers—on the Moon.

## Horrors

'I think that both sides realise that when we each have colonies on the Moon these colonies will certainly want to mutually support each other—at least in an emergency.

'I think we'll see increasingly that the exploration of space is something done in the name of mankind, not of any individual nation. . . .'

So are we again 'calling a new world into existence to redress the balance of the old. . . .?' To many this will seem an absurd 20th century technocrat's version of pie-in-the-sky.

But no one who saw the beauty, the fragility of our island earth in the live TV of the last Moon voyage could fail to feel a shock that such beauty contained the horrors of Biafra and Vietnam. And realising the absurdity and obscenity of the contrast may be the first step to ending it.

It comes to this. Man can—and will—live in space. In giant satellites orbiting Earth, in plastic igloos on the Moon, in large scale colonies, probably, on Mars.

We still need to know more about the red planet. Its environment is probably just not bearable to Man, at least without an artificial spacesuit 'skin.' But the environment could be changed—for instance by cultivating plants to top up the oxygen in its atmosphere.

To see what could be possible one has only to think of the ways in which—by accident and for the worse—we are changing our own environment with DDT infection and air pollution.

If not, we shall just have to live in new, artificial skins almost permanently.

## Perish

Out in space, Man can find room to move as his own planet fills up remorselessly with human life. It is surely preferable to a globe in which every dry inch is covered with skyscrapers to the present density of Manhattan—the human battery farm predicted for 2100 AD on the present rate of the population explosion.

And the 'frailty' of Earth seen from space is no fancy imagery. We are vulnerable—horribly—

under our thin sheath of atmosphere.

The sun is dying. But before it dies—all modern astronomers agree—it will explode. It will become a huge H-bomb, with a 200 million-mile wide fireball that will fry the Earth and may even swallow it up.

When that is imminent—we shall have to move out or perish. And Mars may not be far enough. Life may have to decamp—at least temporarily—to the planets of an adjoining star.

So far from racing needlessly into space, we may have started none too soon.

One last intriguing thought—as we stand on the brink. In the last few months astronomers have been astounded to find that complex substances very close to the life molecule do exist in the abyss of space.

It is one more clue to the steadily growing suspicion that life, though it may have grown in our oceans, began out there and was wafted to earth like seeds.

So perhaps, when the Apollo 11 trio blaze up into the sky they will not be venturing into the hostile unknown.

Perhaps, at last, life is going home. . . .

YOUR  
PERSONAL  
COPY  
OF  
MOON  
MAIL



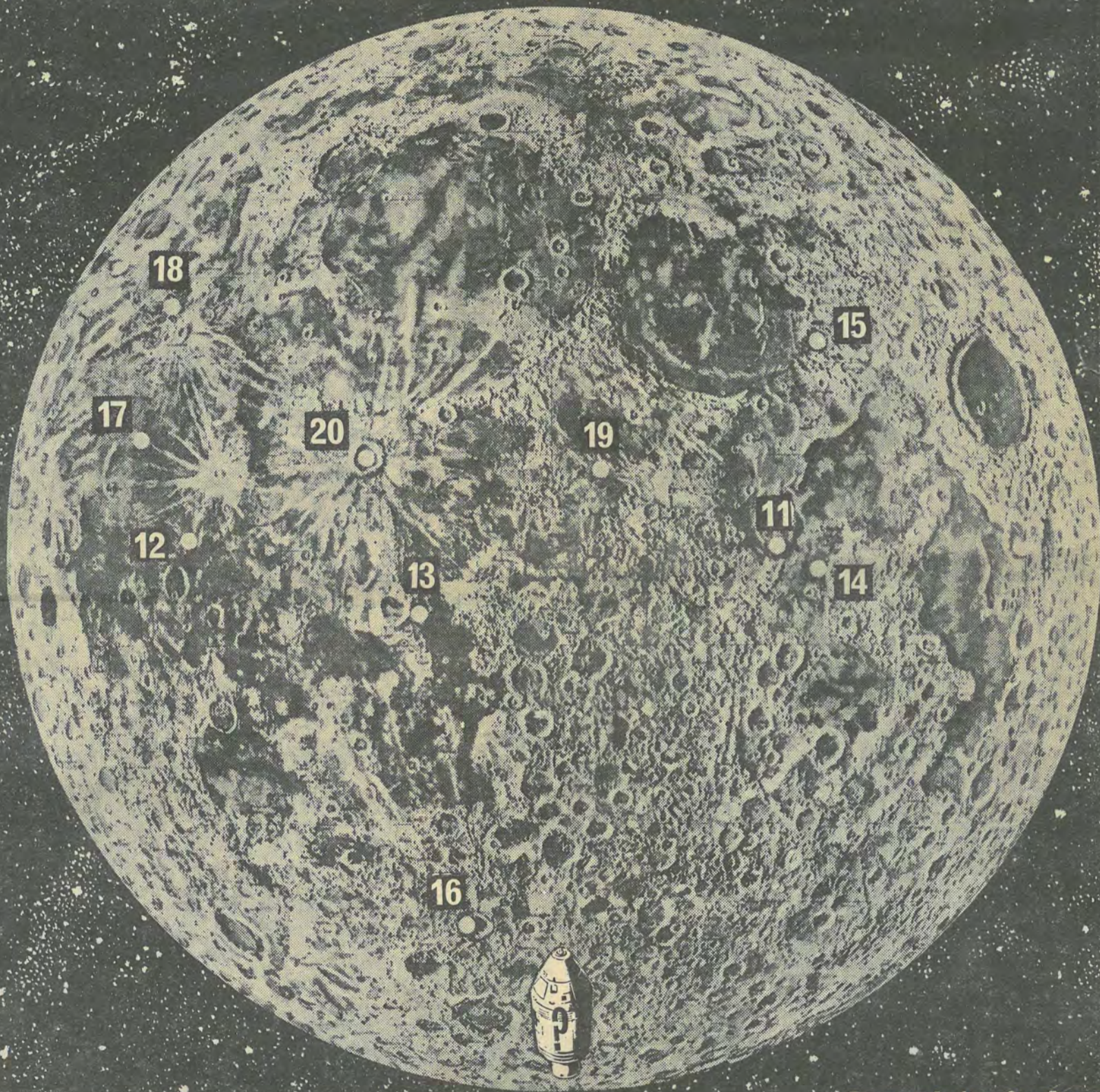
Copies of the three Moon Mail issues of the Daily Mail can be obtained from Back Numbers, Daily Mail, Northcliffe House, London, E.C.A.

The cost of one copy, including postage is 9d., which may be sent in stamps.

For two copies or more a postal order must be sent. Two copies cost 1s. 6d., three copies 2s., and thereafter 6d. for each additional copy required.

# Where next?

MOON  MAIL



Proposed sites for Lunar landings

## It's only a beginning...

APOLLO 11 is not the end of the adventure, only the beginning. Nine other missions—in which men can stay up to three days on the surface—are planned at the rate of three a year up to the end of 1972.

The schedule for the Moon explorers is shown in this exclusive Daily Mail map. Future astronauts will peer into the two-mile-wide chasm of the rille of Hyginus.

They will take a close look at Schroeter's Valley, another savage wound in the

Moon's surface, and the neighbouring crater Aristarchus, where some astronomers think they can sometimes see gas or clouds of dust showing that the Moon may still have active volcanoes.

They will examine the wide shallow rilles that look exactly like dried-up river beds.

Perhaps that's just what they are. If so the Moon may be a world that was once alive but died as its atmosphere leaked away into

space because of a gravity too weak to hold it.

There may even be fossils of primitive life that started but died out like the dinosaurs.

Some astronomers believe there may be vast sheets of ice beneath the surface. These could be released to support some artificial cultivation on the Moon.

On the explorers' report will depend whether Man goes to the next logical stage—an Antarctic-style base on his first space colony.

APOLLO  
11

Sea of Tranquility

APOLLO  
17

Marius Hills

APOLLO  
12

Ocean of Storms

APOLLO  
18

Schroeter's Valley

APOLLO  
13

Fra Mauro Hills

APOLLO  
19

Hyginus Rille

APOLLO  
14

Censorius Crater

APOLLO  
20

Copernicus Crater

APOLLO  
15

Littrow Crater

APOLLO  
16

Tycho Crater

APOLLO  
?

Month-long 'Moon Tour' in Polar Orbit