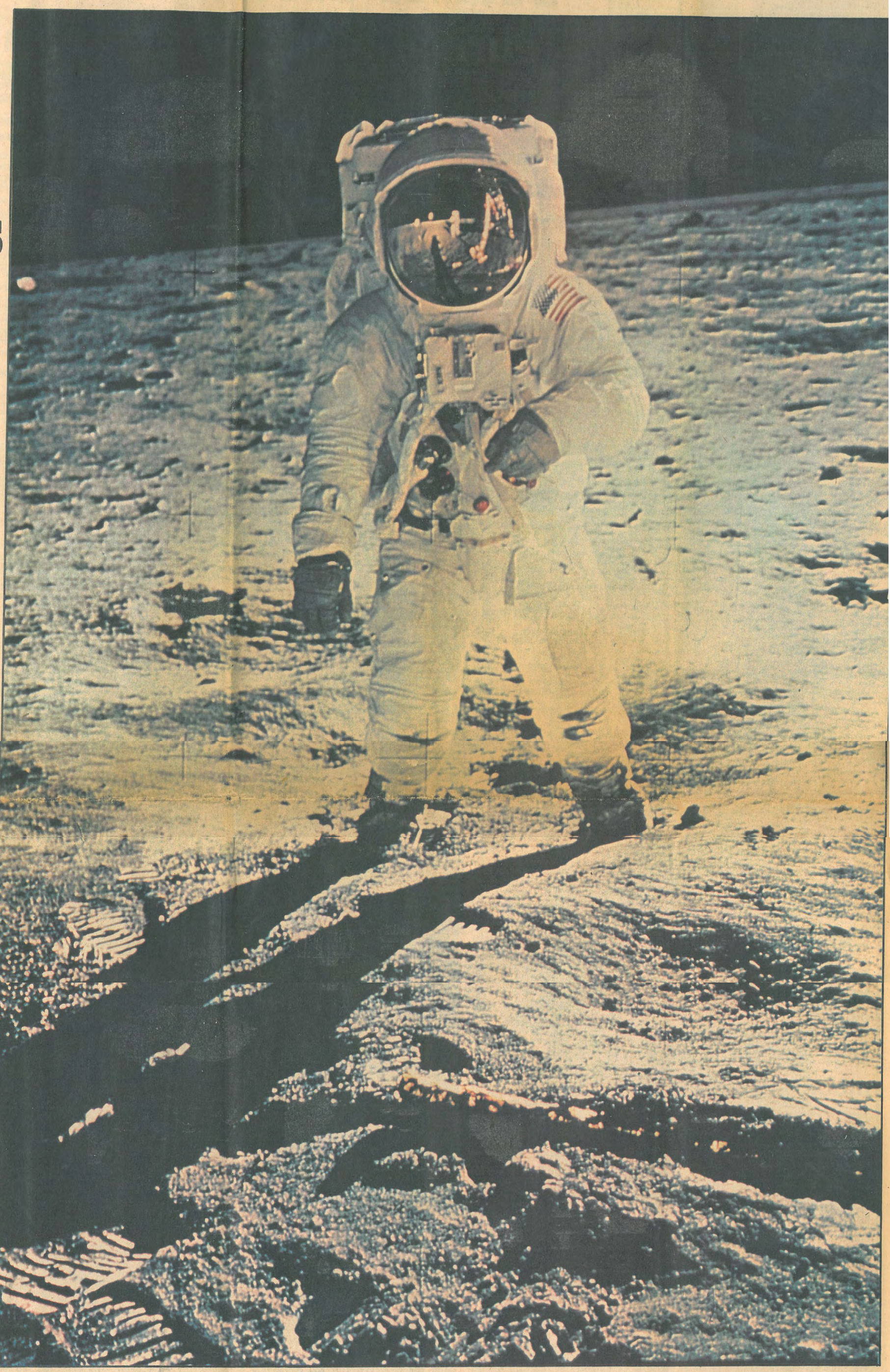
BIRMINGHAM POST

MONDAY, AUGUST 4, 1969

A four-page souvenir of the Apollo 11 moon landing mission — July 16 to July 24, 1969

Not to be sold separately from The Birmingham Post inside

The most remarkable photographs in the history of man: First close-up glimpses of an alien world



Man from another world on the moon—the historic picture which contains all the elements of one of mankind's greatest adventures. Lunar module pilot Edwin "Buzz" Aldrin walks across the dead, dusty, pitted surface of the moon. For him it was the realisation of an ambition he shared with all the men of vision who have ever lived in the ages since humanity first acquired the wits to wonder. Aldrin, 39-year-old ex-fighter pilot, father of three, is the athlete of the trio of lunar pioneers. His great hobby is scuba diving and water ski-ing, pursuits which contrast absolutely with the alien high-vacuum environment in which he is seen here. Reflected in the visor on his helmet are the lunar module and the civilian flight commander Neil Armstrong, who is taking the picture with a specially designed camera on 70mm. film. Armstrong, another ex-fighter pilot and 39-year-old father of two, also provides a neat paradox between his heart-stopping professional duties and his private interests. He is a weekend glider pilot. And if there ever was a mind's eye picture of a man from outer space, is this not it . . . ?

Log of an eight-day miracle of mass technology and individual courage

Wednesday, July 16

14.32 Blast off of Apollo 11 from Launch Pad 39A. The 3,242-ton space machine puts its third stage and the spacecraft into brief earth orbit.

14.44 Spacecraft travelling at 17,432 m.p.h.

17.15 Spacecraft leaves earth orbit on moon trajectory.

Thursday, July 17

15.32 Apollo reaches 104,350 miles, half way between earth and moon.

16.16 Having slept, the crew prepare for course correction.

Friday, July 18

Television viewers throughout the world see pictures of Armstrong and Aldrin as they transfer from Columbia to Eagle and examine interior ready for undocking.

Saturday, July 19

Apollo goes into full lunar orbit and sends back pictures of the surface of the moon.

Sunday, July 20

19.12 Small thruster motors on the command ship Columbia fired for about eight seconds to take the ship clear of Eagle and leave lunar module free to fly down to moon's surface. Command module remains in a 60-mile high orbit.

19.54 Lunar lander about 12.9 nautical miles above the moon and descending.

20.05 Ignition for the powered descent.

21.18 Touchdown in the Sea of Tranquillity near the lunar equator after 102 hours 45 minutes and 42 seconds had elapsed from lift-off at Cape Kennedy.

23.40 Astronauts eat their first meal on the moon.

Monday, July 21

3.35 Astronauts make first attempt to open hatch of lunar module.

3.40 Hatch open. Armstrong crawls backwards out of the 32-inch-square hatch.

3.51 Armstrong on the porch and puts his foot on the first rung of the ladder.

3.56 Armstrong takes the first step on to the moon, and takes first pictures and collects samples.

4.10 Aldrin descends. Experiments with movement at low gravity. Collects rocks. Aldrin unveils plaque and unfurls the Stars and Stripes.

5.40 They begin to return to the module.

6.11 Hatch closed.

18.50 Blast off from the moon leave base of their vehicle behind.

22.32 Bug climbs to re-join Columbia in orbit. The two craft link and shudder for eight seconds during the operation.

Tuesday, July 22

5.44 Fire rocket for journey back to earth.

18.00 Astronauts wake after eight hours' deep sleep.

18.40 Spacecraft passes the point where the earth's pull of gravity is felt, 175,030 nautical miles from earth and 33,460 nautical miles from the moon.

21.00 Astronauts fire stabilising rockets to put Columbia on a track down an imaginary cone in space which converges at the upper level of the earth's atmosphere.

Wednesday, July 23

Journey home continues.

Thursday, July 24

17.50 Splashdown in the Pacific, a bare 45 seconds earlier than the original flight plan. The spacecraft turned upside-down.

17.56 Craft righted. Astronauts taken by frogmen from the craft and flown by helicopter to the U.S.S. Hornet and placed immediately in quarantine.

ON OTHER PAGES

TWO A detailed report of conversations between the astronauts and with control during the descent from orbit and the start of the walk on the moon, and a glossary of terms.

THREE The rest of the conversation on the moon's surface and an account of the take-off for Eagle's return to orbit with a full selection of monochrome pictures.

FOUR More colour pictures including the blast-off, the splashdown and the welcome aboard the aircraft carrier from President Nixon, with reminders of pioneers Gagarin, Glenn and Tereshkova.

Today's Birmingham Post is inside this souvenir

A four page special feature recording the most outstanding and memorable words . . .

Detailed accounts of the conversations during man's most remarkable day

Footprints on the moon as mankind makes 'a great leap'

Transcripts of conversations during man's first walk on the moon, among astronauts Neil A. Armstrong, Edwin E. "Buzz" Aldrin, Jr., and Michael Collins, and mission controllers at the space centre in Houston.

Armstrong—Going to step off the LEM now.

Armstrong—That's one small step for man, one giant leap for Mankind. The surface is fine and powdery. I can pick it up loosely with my toe. It does adhere in fine layers like powdered charcoal to the sole and inside of my boots. I only go in a small fraction of an inch—an eighth of an inch—but I can see the footprints of my boots and the treads in the fine sandy particles.

McCandless—Roger, this is Houston. We're copying.

Armstrong—There seems to be no difficulty in moving around, as we suspected. It's even, perhaps, easier than the simulations of one-sixth-G that we performed in simulations on the ground. Hopefully, no trouble to walk around.

Armstrong—The descent engine did not leave a crater on the ground. It's essentially a one-inch clearance on the ground. I can see some evidence of rays emanating from the descent engine. But a very insignificant amount.

Armstrong—OK, Buzz, ready to bring down the camera.

Aldrin—All ready. It looks like I'm all squared away and in good shape.

Armstrong—It's quite dark in the shadow and a little hard for me to see but I have good footing. I'll work my way to the sunlight here without looking directly into the sun.

McLeaish—Unofficial time on first step 109:24:20.

Armstrong—Looking at the LEM. I'm standing directly in the shadow now, looking up at Buzz in the windows—and I can see everything quite clearly. The light is sufficiently backlighted in the front of the LEM so that everything is clearly visible.

Aldrin—I'm going to be changing . . .

Armstrong—OK.

McLeaish—The surgeon says the crew is doing well. Data is good, the crew is doing well, 35 and a half minutes of PLSS time expended now.

Armstrong—Right.

McCandless—OK, that's good.

Armstrong—It's very interesting. It's a very soft surface, but here and there where I plug with the contingency sampler I run into a very hard surface. But it seems to be cohesive material of the same sort. I'll try to get a rock in here.

Armstrong—It has a stark beauty all its own. It's like much of the high desert of the United States. It's different, but it's very pretty out here. Be advised that a lot of the samples out here are the hard rock sample . . .

Aldrin—OK, the handle is off. It pushes about six or eight inches in the surface. It pushes very easy.

Armstrong—Sure is. I'm sure I could push it farther but it's so hard for me to bend down farther.

Armstrong—That pocket open?

Aldrin—Yes, it is—it's not quite far enough. Hit it back against your suit once more.

Armstrong—That's in the pocket.

Aldrin—Yes, it is. Push down . . . No it's not all the way in—push—there you go.

Armstrong—The sample is in the pocket.

McCandless—This is Houston. Roger Neil.

Aldrin—OK, I got the cameras on at one frame a second.

Armstrong—OK.

Armstrong—Are you getting a TV picture now, Houston?

McCandless—Neil, yes we are getting a TV picture.

McCandless—Neil, this is Houston. We're getting a picture—You're not in it at the present time. We can see the bag . . . being moved by Buzz. Here you come now in the field of view now.

Aldrin—OK, ready for me to come out?

Armstrong—Just one second I'll . . . the hand rail.

Armstrong—OK.

Aldrin—That's got it. Are you ready?

Armstrong—All set. OK you saw what difficulties I was having. I'll try to watch your PLSS from underneath here.

Armstrong—OK, your PLSS looks like it's clear and OK. OK, now drop your PLSS down. OK you're clear. Got about an inch clearance on top of your PLSS.

Armstrong—You're right at the back of the porch.

Aldrin—Arching of the back . . cleared . . . without any trouble at all.

Armstrong—Looks good.

McLeaish — 45 minutes PLSS time expended.

Aldrin—That's our home for the next couple of hours—we ought to take care of it. Okay I'm on the top step. It's a very simple matter to hop down from one step to the next.

Armstrong—Yes, it's very comfortable. And walking is also comfortable. You've got three more steps and then a long one.

Aldrin—Leave that one foot up there and both hands. (Jumps to step).

Armstrong—There you go.

Aldrin—That's a good step.

Armstrong—About a three footer.

Aldrin—Beautiful view!

Armstrong—Isn't that something?

Aldrin—It's really a fine powder, isn't it? Right in this area . . fine powder . . . it's hard to tell whether it's a . . . or a rock.

Aldrin—Reaching down is fairly easy. I don't want to get my suit dirty at this stage. The mass of the backpack does have some effect in pressure.

Aldrin—There's a slight tendency I can see now to lean backwards due to the soft, very soft, texture.

Armstrong—There's a big rock there now.

Aldrin—No crater there at all from the engine.

Armstrong—No. I wonder if that despression under the engine . . .

Armstrong—Right, I think that's a good representation of our sideways velocity on touchdown.

Aldrin—Incidentally, these rocks, this very powdery surface. Uh . . .

McCandless—Say again please Buzz, you're cutting out.

Aldrin—I say that the rocks are rather slippery. The powdery surface, when it's all there fills all the real little . . . fine tends to slide over rather easily.

McLeaish—Neil Armstrong is getting ready to move the TV camera now. Out to its panorama position.

Aldrin—I was just about to lose my balance in one direction—and recovery is very natural and very easy. But be careful that you're leaning in the direction you want to go. You have to cross your foot over to stay. Neil, didn't I say we might see some purple rock?

Armstrong—Find the purple rocks?

Aldrin—Yep. Pretty small sparkly fragments of purple rock. Take a first guess some type of biotite. We'll leave that to the lunar analysis. You don't dig down more than a quarter of an inch.

Aldrin—Neil is now unveiling the plaque.

McCandless—Roger, we've got you both sighted.

Armstrong—Still we haven't read the plaque — I'll read the plaque on the front leg of his LEM. It shows two hemispheres. It says: '*Here men from the planet Earth* first set foot upon the moon, July, 1969. We came in peace for all mankind.' It has

TURN TO NEXT PAGE

VOICES FROM THE NEW MOON...

First words from a man standing on the moon

Tranquillity base, the moon — "That's one small step for man — one giant step for mankind."

They were the first words of Neil A. Armstrong when he set foot on the moon.

What the moon – and the earth – looked like

Voices from the moon: Edwin E. Aldrin, describing the surroundings: "It looks like a collection of just about every variety of shape, angularity, granularity and every variety of rock you could find . . . there doesn't seem to be too much of a general colour at all."

Told that ground controllers were smiling: Armstrong — "There are two of them up here."

Armstrong looking from his perch back at earth: "It's big and bright and beautiful."

Armstrong's first words to Michael Collins, flying 70 miles above in the command ship Columbia:

"Just keep that orbiting base ready for us up there."

Exultation and curiosity about the alien 'desert'

"Magnificent desolation," were Aldrin's first words on setting foot on the moonscape.

"Hey Neil, didn't I say we would see some purple rocks. "Find a purple rock?" Armstrong asked.

"Yep.

"Hey, you're standing on a big rock now."

The descent: the fledgling Eagle lands in safety

A report of conversations between astronauts Neil A. Armstrong, Edwin E. "Buzz" Aldrin Jr. and Michael Collins, ground communicator Charles M. Duke Jr. and mission control spokesman Douglas K. Ward on Eagle's descent to the Moon.

Ward—This is Apollo control. We're now six minutes from ignition (for separation manoeuvre).

Duke—Columbia, Houston. You're looking good for separation. You're go for separation, Columbia.

Collins—Make the small trim manoeuvre.

Armstrong—Mike, what's going to be your pitch angle?

Collins—007 degrees.

Armstrong—OK.

Collins—That close enough for you?

Armstrong—No, that's good.

Collins—You've got a fine-looking flying machine there, Eagle—despite fact you're upside down.

Armstrong—Somebody's upside down.

Collins—One minute to ignition, Take care.

Armstrong—See you later.

Collins—Thrusting . . . my DSKY is reading 4.9 . . . 5.0 and my MS 104.5.

Duke—Roger, Columbia. Copy. It looks good. Over.

Collins—OK.

Duke—Columbia, Houston. We'd like you to terminate. Over.

Collins—Roger.

Armstrong—You're going right down U.S. 1, Mike.

Collins—Eagle, Columbia. You switch over to VHF ranging mode?

Armstrong—Roger. Let's go to VHF ranging now.

Collins—OK Mark.

Collins—Eagle, Columbia. I'm reading you loud and scratchy. Could you stay quiet for 15 seconds, I can get this locked on?

Armstrong—OK.

Collins—I got a solid lock on you, I got you .27 miles (.5 kms).

Collins—Put your tracking light on, please.

Armstrong—It's on. Mike.

Collins—Thank you.

Aldrin—You want to give us a mark at .7 of a mile?

Collins—Will do.

Aldrin—OK. We've just .7 on radar.

Collins—Mark . . . Radio is sort of scratchy but I read you.

Duke—Columbia, Houston. We lost data with Eagle.

Collins—Eagle, this is Columbia. Houston would like you to select . . .

Armstrong—Houston, you reading Eagle now?

Duke—That's affirmative, Eagle. Reading you 5 by 5.

Duke—Columbia, Houston. We'll have LOS . . . AOS for you 102.15. Over.

Collins—Thank you.

Duke—Eagle, Houston. It appeared during P-52 manoeuvre that the S-band went into stop. Verify both headband breakers are in.

Duke—Eagle, Houston. You're go for DOI. Over.

Aldrin—Roger, go for DOI.

Aldrin—Houston, torquing angles minus 0, 292, 00, 280, minus 00, 094.

Duke—Roger, Eagle. You can torque it over.

Aldrin—Roger. Torquing.

When the spacecraft re-emerged from behind the moon:

Duke—Columbia, Houston. We're standing by. Over.

Duke—Columbia, Houston, Over.

Collins—Houston, Columbia. Reading you loud and clear.

Duke—How did it go, Mike?

Collins—Listen, Baby, everything is going just great—swimmingly!

Duke—Columbia, Houston. We expect you to lose you high gain sometime during powered descent.

Collins—Columbia, Roger. You don't much care, do you?

Duke—No, sir.

Ward—This is Apollo control. We have acquisition of signal from the LEM.

Aldrin—Houston, Eagle. How do you read?

Duke—5 By Eagle. We're standing by for your burn report.

Aldrin—The burn (for initial descent orbit) was on time. The residuals are (static).

Ward—We are attempting to restore the antenna lock through the big 200-foot dish at Goldstone. We'll stand by.

Duke—Eagle, Houston. We have you now. Do you read? Over.

Aldrin—Loud and Clear.

Aldrin—I don't know what the problem was. It just started sliding around in yaw. according to the needle I'm pickup a little oscillation now.

Duke—We're working on it.

Ward—Aldrin is referring to the LEM steerable antenna.

Aldrin—Did, you copy the sun check Charlie?

Duke—That's affirmative, we did, Buzz. Out.

Ward—Eagle is now at 10.5 nautical miles (19.3 kms.), 7 minutes—7minutes from ignition.

Duke—Eagle, Houston. If you're ready you're go for a powered descent. Over.

Duke—Columbia, Houston. We've lost them on the high gain again. Recommend a yaw of 10 degrees right and reapply.

Collins—Eagle, Columbia. You're go for PDI and they recommend you yaw 10 right and try the high gain again.

Duke—We read you.

Aldrin—Circuit breakers . . .Gimbal AC closed . . . off. Gimbal enable. Scale 25.

Duke—Eagle, Houston. On my mark, 3:30 till ignition. Mark: 3:30 till ignition.

Aldrin—Roger, copy . . . auto PDR . . . aboard abort stage recess control in mode control . . . AGS is reading.

(Heavy static).

Duke—Columbia, Houston. We've lost them, tell them to go. . . .

Duke—Eagle. We've got you now. It's looking good. Over. Eagle, Houston. Everything's looking good. Over.

Armstrong—Roger. Copy.

Aldrin—Throttle down. It's better than the simulator. Things look real close.

Ward—Altitude is now 21,000 feet (6,300 metres). Still looking very good. Velocity down to 2,700 feet per second.

Astronaut—I'm still on . . . let me try auto.

Duke—You're go for landing. Over.

Aldrin—Go for landing, right. Altitude 3,000 feet (900 metres) . . 2,000 feet (600 metres). Into the AGS 47 degrees.

Ward—Altitude is 1,600 . . . 1,400 feet. Still looking great.

Aldrin—35 degrees, 5 degrees, 700 feet . . . 30 degrees . . . 540 feet down at nine . . . 250 fee tdown at 4 . . . velocity . . . 47 forward . . . 70 . . . 50 down at 2½. 19 forward. Altitude velocity light 2½ down. 13 forward . . . 200 feet. 4½ down. 5½ down. 150 feet. 5½ down. 9 forward. 120 feet. 100 feet. 3½ down, 9 forward. 75 feet and looking good. Down ½. Six forward. 60 seconds. Down 2½ . . . forward . . . forward . . . 40 feet down 2½. Kicking up some dust. 4 forward. 4 forward. Drifting right a little . . .

Armstrong—Contact light. Okay, engine stopped. ACA at a descent. Mode control both auto. Descent engine command override off. Engine arm off 413 is in. Houston We uh . . . Tranquillity Base here. The Eagle has landed."

Duke—Roger. Copy you down. You got a bunch of guys about to turn blue here. They're breathing again.

Duke—You're go for stay one, go for stay one.

Aldrin—Looks like we're . . .

Duke—Eagle, you're stay for one and we see you venting the ox (oxygen).

Collins—Houston, do you read Columbia high gain?

Duke—Roger, we read you Columbia. He has landed at Tranquillity Base. Eagle has landed

Collins—Yeah, I heard the whole thing. Good show. Fantastic.

Armstrong—Houston, that seemed like a very long final phase. The auto target was taking us right into a football field size crater full of boulders . . . It required us flying manually over the rockfield to find a real good area.

Duke—Roger, we copy. It was beautiful here, Tranquillity. Over.

Aldrin—We'll get to the details here of what's around here, but it looks like a collection of every variety, shape, angularity—every variety of rock you could find. Colours depending on how you're looking. It doesn't appear too much of a general colour at all. However it appears that several rocks and boulders look as if they're going to have some interesting colours.

Duke—Tranquillity, be advised there are lots of smiling faces here and all over the world.

Astronaut—Two of 'em up here.

Collins—And don't forget one in the Command Module.

Essential vocabulary for a trip to the moon

A.O.S. : Acquisition of signal.
S.R.C. : Saple return container.
CAPCOM : Command communicator.
CONSUMABLES : Fuel, oyygen, &c.
E.V.A. : Extravehicular activity.
L.E.C. : Cable.
L.M. : Lunar module.
L.O.S. . Loss of signal.
M.E.S.A. : Equipment locker.
P.A.O. : N.A.S.A. public affairs officer.
P.L.S.S. : Personal life support system.
VESICLES : Bubbles.

President Nixon's call to the moon

This is the text of the conversation between President Nixon and the astronauts on the moon surface, Neil Armstrong and "Buzz" Aldrin.

President Nixon: Hello Neil and Buzz. I'm talking to you by telephone from the Oval Room at the White House. And this certainly has to be the most historic telephone call ever made.

I just can't tell you how proud we all are of what you have done. For every American this has to be the proudest day of our lives, and for people all over the world. I am sure they, too, join with Americans in recognising what an immense feat this is.

Because of what you have done the heavens have become a part of man's world. And, as you talk to us from the Sea of Tranquility it inspires us to redouble our efforts to bring peace and tranquility to Earth.

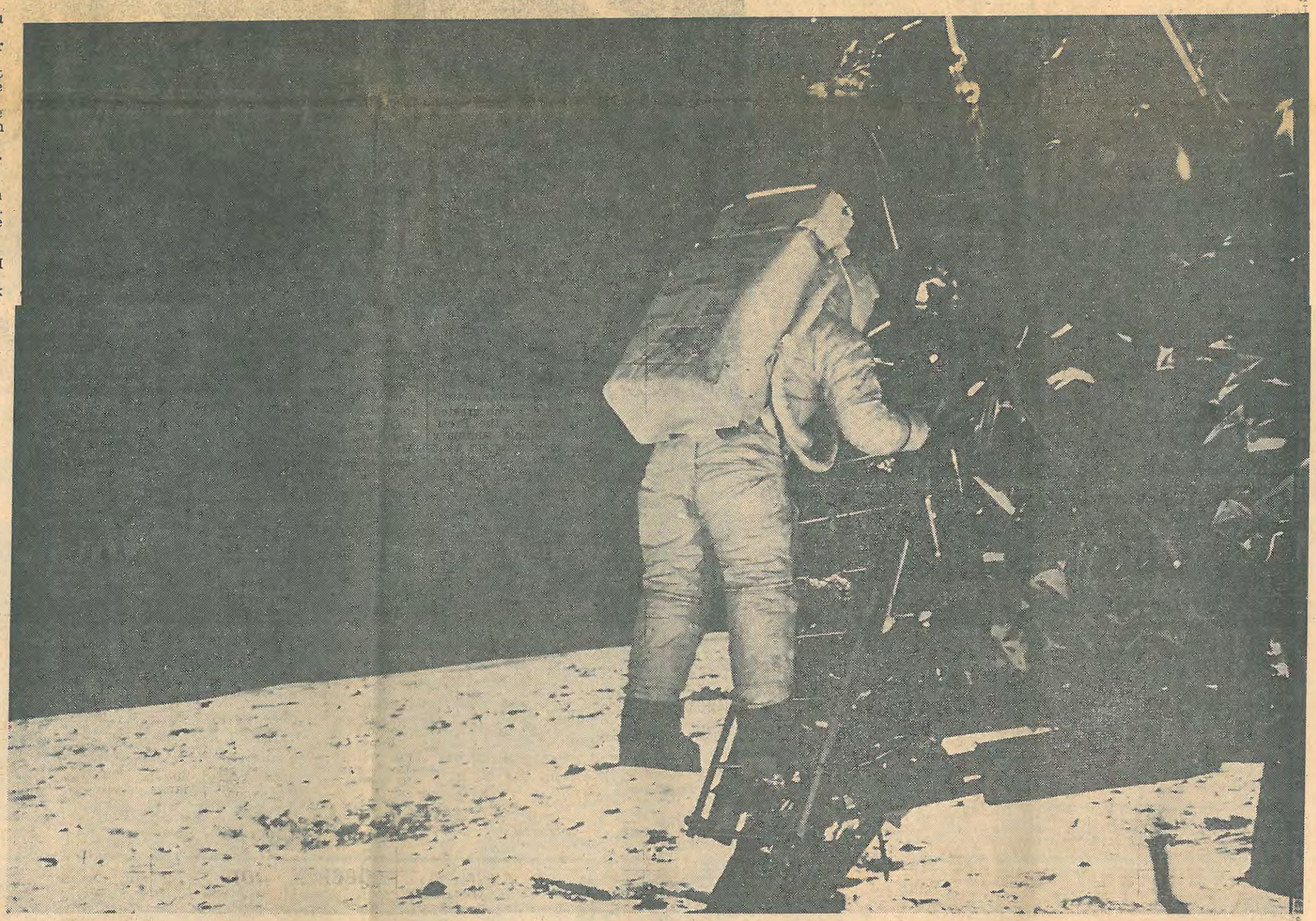
For one priceless moment in the whole history of man all the people on this Earth are truly one. One in their pride in what you have done and one in our prayers that you will return safely to Earth.

Armstrong: Thank you Mr. President. It's a great honour and privilege for us to be here representing not only the United States but men of peace of all nations. Men with interest and curiosity and men with the vision for the future. An honour for us to be able to participate here today.

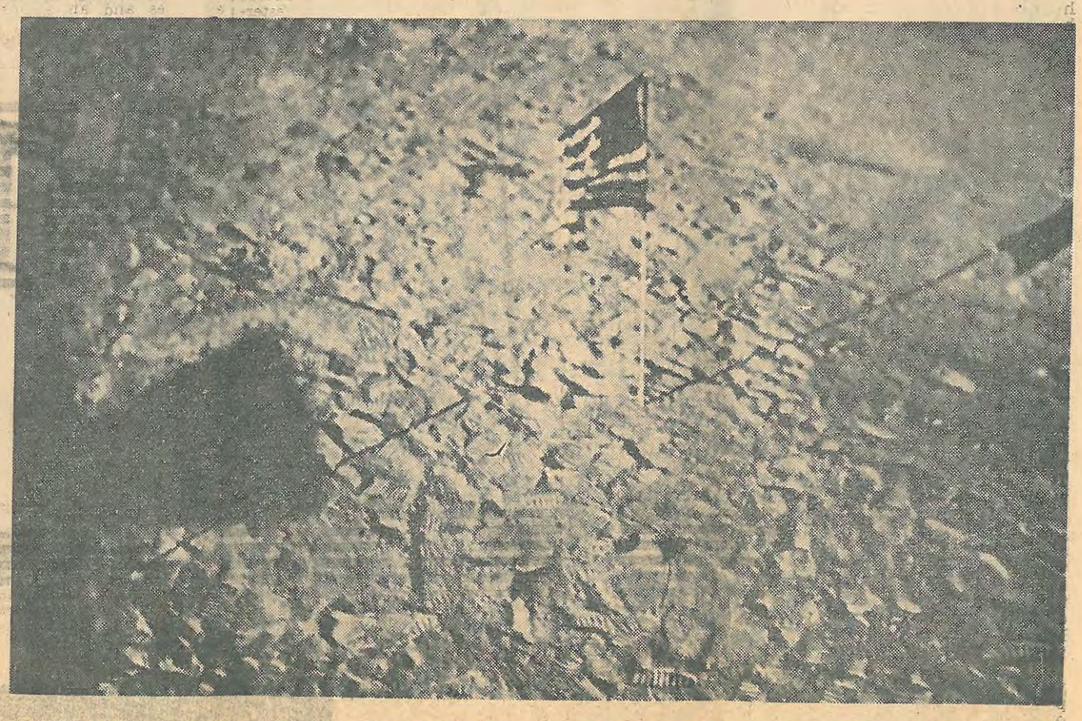
President Nixon: Thank you very much and I look forward — all of us look forward — to seeing you on the Hornet on Thursday.

Aldrin: Look forward to that very much, sir.

President Nixon, before hanging up: I just hope they don't charge me a toll on that call.



Lunar Module pilot Buzz Aldrin makes his way cautiously down Eagles' ladder to the lunar surface to take part in setting up the scientific experiments and the laser reflector the astronauts have brought with them. The platform, the hatch and the gold foil round the base of the module can be seen, sharply etched by the hard light which on the moon casts shadows of unrelieved blackness.



Tranquillity Base as it will look for a million years until meteors and meteorites have, infinitely slowly, obliterated the footprints, and perforated and demolished Old Glory — wearing away man's first colony in space which lasted for about an "hour" of a lunar day with its elaborately intinerant population of two.

. . . incidents and pictures during Eagle's swoop down to the moon, her stay there; and the take-off towards earth.

Tableau in an early dawn of 21½ earth hours—or one 'hour' in the fortnight-long lunar day

. . . MAN'S FIRST COLONY IN SPACE

The longest long distance phone call in history

Armstrong, responding to the longest long distance phone call, from President Nixon, congratulating them:

"Thank you, Mr. President, it's a great honour and privilege for us to be here representing not only the United States but men of peace of all nations, men with interest and curiosity and men with the vision for the future."

Getting about lunar style in 'one sixth gravity'

The best way to move on the moon? Armstrong: "You have to be careful where the centre of mass is. Like a football player, you just have to get out to the side and cut a little bit."

Aldrin: "It's the so-called kangaroo hop. But it does work."

And after becoming accustomed to the lighter gravity on the moon, Armstrong decided: "Isn't it fun?"

Directing the world's most spectacular T V show

Armstrong, telling Aldrin to move toward the television camera: "Good work. Good show. Hey, whoa, whoa, stop. Back up."

The strange beauty of the new solar system colony

Armstrong's description of the moonscape: "It has a stark beauty all of its own. It's like much of the high desert of the United States. It's different, but it's very pretty out here."

The ascent towards a great homecoming

The astronauts prepare for the lift-off countdown, take off and, safe in orbit disappear with their mother ship, Columbia behind the moon.

Armstrong—We'll go for lift-off and watch this.

Evans—Roger. We'll tell you to watch the ascent feed and close the shut-off.

Evans—It's a little less than 10 minutes, Eagle. Everything looks good. We assume the steerable antenna is in an idle mode?

Armstrong—Roger. It is in mode idle.

Evans—Nell, I'm making that check. You look good.

Armstrong—Couldn't be better.

White—Guidance reports navigation systems looking good.

Armstrong—6, 5, 4, 3, 2, 1, (noise).

Armstrong—Beautiful — 26, 36 feet per second up. . . . Come aloft, a very quiet ride.

White—One thousand feet high, 80 feet per second.

Armstrong—Eagle, Houston. We request a manual override.

Evans—One minute, you're looking good.

Armstrong—Roger.

Aldrin—There's a little bit of slow wallowing back and forth.

Evans—Roger. Mighty fine.

Armstrong—Beautiful.

Evans—You're looking good at two (minutes into launch). All agree. You're coming up beautiful.

Armstrong—This thing looks like it's holding good, Houston.

Evans—You're go at three minutes.

Aldrin—Roger. We're going right down U.S.-1.

Evans.—Roger. You're four minutes. You're going right down the track, everything's great.

Armstrong—That's impressive looking, isn't it?

Evans—Eagle, Houston. You're looking good.

Armstrong—The pressure's holding good.

Armstrong—Shutdown.

Evans—Eagle, Roger. It's a great go. You have good residuals.

Armstrong—Eagle is safe in orbit, having left Tranquillity Base and leaving behind a replica of our Apollo 11 badge and olive branch.

Evans—Eagle, Houston. We copy. The whole world is proud of you.

Evans—We saw a jump in the cabin pressure there. Could you confirm the cabin pressure valve is closed?

Aldrin—Roger. It's closed.

Collins—Eagle, Columbia. Do you read Columbia? Over.

Collins—Do you read Columbia, Eagle?

Collins—Houston, would you tell Eagle his Y-dot is minus 1.0? Eagle can't read Columbia.

Evans—Eagle, your Y-dot is minus 1.0.

Aldrin—Roger. Got that.

Collins—Houston, Columbia. I'm unable to read Eagle. Do you have any suggestions?

Evans—Columbia, we understand you're unable to read the Eagle.

Aldrin—Houston, tell Columbia we read him about pitch two.

Evans—Columbia, it looks like your best antenna would be forward—for the LEM.

Collins—Columbia, reading you loud and clear now Eagle.

Evans—Eagle and Columbia. About one minute to loss of signal on the Columbia.

White—Columbia is behind the moon.

Evans—Eagle, Houston. We'll see you coming around the other side.

White—We have loss of signal now on Eagle.

When they said 'roll 'em' in the lunar studios...

THE COLOUR AND TEXTURE OF LUNA FIRMA

Greyish cocoa colour — very fine particles — white crystals — darker texture when kicked up

FROM PREVIOUS PAGE

crew members signatures and the signature of the President of the United States.

Armstrong—How is the temperature of the camera?

Aldrin (voice quavering)—T-T-Temperature of the camera is C-C-Cold.

Aldrin—Houston, how is that field of view going.

McCandless—Neil, this is Houston. The field of view is O K. We'd like you to aim it a little more to the right, over. Okay, that looks good, Neil.

McCandless—We've got a beautiful picture, Neil.

Armstrong—O K I'm going to move it.

McCandless—O K, we got that one.

Armstrong—O K, this one's right down front. Facing west. I want to know if you can see a larger angular rock in the foreground?

McCandless—Roger, looks like another rock to the left. . . .

Armstrong—Farther beyond it is a larger rock . . . the closer one is sticking out of the sand about one foot . . . it's standing on edge.

Armstrong—The little hill just beyond the shadow of the L E M is one of a pair of elongated craters. . . . We'll probably get some more work in there later.

McCandless—Roger, we see Buzz going about his work.

McLeaish—Buzz is erecting the solar wind experiment now.

Armstrong—All L E M systems are still looking good. O K?

McCandless—Columbia, Columbia, this is Houston, over.

Collins—Columbia, over.

McLeaish—Neil Armstrong has been on lunar surface now almost 45 minutes.

McCandless—Going beautifully. I guess they're setting up the flag now.

McCandless—Guess you're the only person around who doesn't have T V coverage.

Collins—That's all right. I don't mind a bit.

Armstrong—You can see the Stars and Stripes on the lunar surface.

McCandless—Beautiful, just beautiful.

***Armstrong**—Do you think you can pull* that end off—pull it up a little . . .

Aldrin—It won't go in.

Armstrong—O K.

Aldrin—I'd like to evaluate the various phases a person can . . . move on the lunar surface. I'm out of your fields of view, right Houston?

McCandless—That's affirmative.

Aldrin—You do have to be careful where the centre of mass is. Like a football player, you just have to get out to the side and cut a little bit.

Aldrin—It's the so-called kangaroo hop. It does work. But your forward mobility is not quite as good as the conventional safe pace might be . . .

McCandless—The President of the United States is in his office now and he would like to say a few words to you.

(Here followed President Nixon's telephone call).

Aldrin—Watch the cable. Lift up right foot. Your right foot is still hooked in it.

Armstrong—O K now.

Aldrin—O K.

Armstrong—Thank you.

Aldrin—The blue colour of my boots has completely disappeared . . . I still don't know exactly what colour to describe this — a greyish cocoa colour. It's covered most of the lighter part of boot—very fine particles.

McLeaish—Neils' been on the surface an hour now. Buzz not quite 20 minutes less than that.

Aldrin—I'm taking a look around the area. There's light grey-coloured halo around my own shadow, around the shadow of my helmet. I'm surveying the dusty area we've kicked up — it's considerably darker in texture than the unkicked-up ones.

***McLeaish**—Neil's been on the surface* about one hour and 10 minutes now.

Collins—Roger. No marks on the L E M that time. I did see three small white objects. I have the co-ordinates. I think they would know if they were in such a location.

McLeaish—Neil has finished collecting and packing the bulk sample.

Aldrin—Houston, how does our time line appear to be going?

McCandless—Roger, looks like you're about a half hour slow on it. We're working on the consumables.

Aldrin—All right.

McCandless—Neil and Buzz, this is Houston. To clarify my last, your consumables are in good shape at this time—the 30-minute reference was in respect to the nominal time line.

Aldrin—There's a very surprising lack of penetration of all four of the (L E M) footpads. I'm trying to determine just how far below the surface they have entered. You'd say about three inches, wouldn't you say, Neil?

Armstrong—At the most, yeah. That one is probably less than that.

McLeaish—The flight surgeon says everything looks fine.

Aldrin—Houston, the seismometer has been deployed manually.

McCandless—Roger.

McLeaish—They've been on the portable life support systems for two hours now.

Aldrin (deploying experiments) — Have you got a site picked out?

Armstrong—Well, Buzz, I think out on that rise there is probably as good as any. Stay on the high ground, there.

Aldrin—Well, it's going to be a little difficult to find a good level spot there.

Armstrong—I would go right around to the left there in that level spot.

Aldrin—Well, it looks like right here it's just as level.

Armstrong—These boulders look like Basalt and they have probably two per cent white minerals in them—white crystals. The thing I reported as vesicular before, I don't think I believe that any more. I believe it's small craters—they look like little impact craters where B B shot has hit the surface.

Aldrin—Houston, I have the (moonquake seismometer) experiment deployed now, and I'm having a little difficulty levelling it.

Armstrong—The bubble is level and the alignment appears to be good.

McCandless—This is Houston. If you're still in vicinity of the P S E, could you get a picture of the ball device.

Armstrong—I'll do that, Buzz.

Armstrong—Oh, shoot. The ball is right in the middle now.

Aldrin—Wonderful. Take a picture before it moves.

McCandless—Buzz. This is Houston, you've got about 10 minutes now prior to commencing your E V A termination activities. Over.

Aldrin—Roger, I understand.

McCandless—Tranquillity Base, this is Houston. The moonquake seismometer has been engaged and we're observing short period oscillations.

McLeaish—Neil Armstrong has been on the surface now about an hour and 50 minutes.

Aldrin—Collecting lunar soil samples. I hope you're watching how hard I have to hit this into the ground to the tune of about five inches, Houston. It almost looks wet. I got it, perfect.

McCandless—Buzz, this is Houston. You have approximately three minutes until you must commence your E V A termination activities. Over.

McCandless — Buzz, this is Houston. It's about time for you to start your EVA close-out activities.

Aldrin — You didn't get anything in those environmental samples did you?

Armstrong — No.

Aldrin — Don't think we'll have time.

Aldrin (getting sample) — O K, can you quickly stick this in your pocket, Neil? I'll head on up the ladder.

Aldrin — Anything more before I head on up, Bruce.

McCandless — Nothing more. Head on up, Buzz.

McCandless — Neil . . . did the Hasselblad magazine go up on the sample return container?

Armstrong — How you doing, Buzz?

Aldrin (going up into LEM) — I'm O K.

McLeaish — The Lick Observatory in California reports a return on the laser experiment.

McCandless—Neil and Buzz, for your information your consumables look in good shape.

Aldrin (as astronauts worked to bring in soil samples and rocks) — Easy now, easy. Easy on the hatch now. I've got it.

Armstrong—Get that package out of your sleeve. Got it?

Aldrin—No. I'll get it when I get up there.

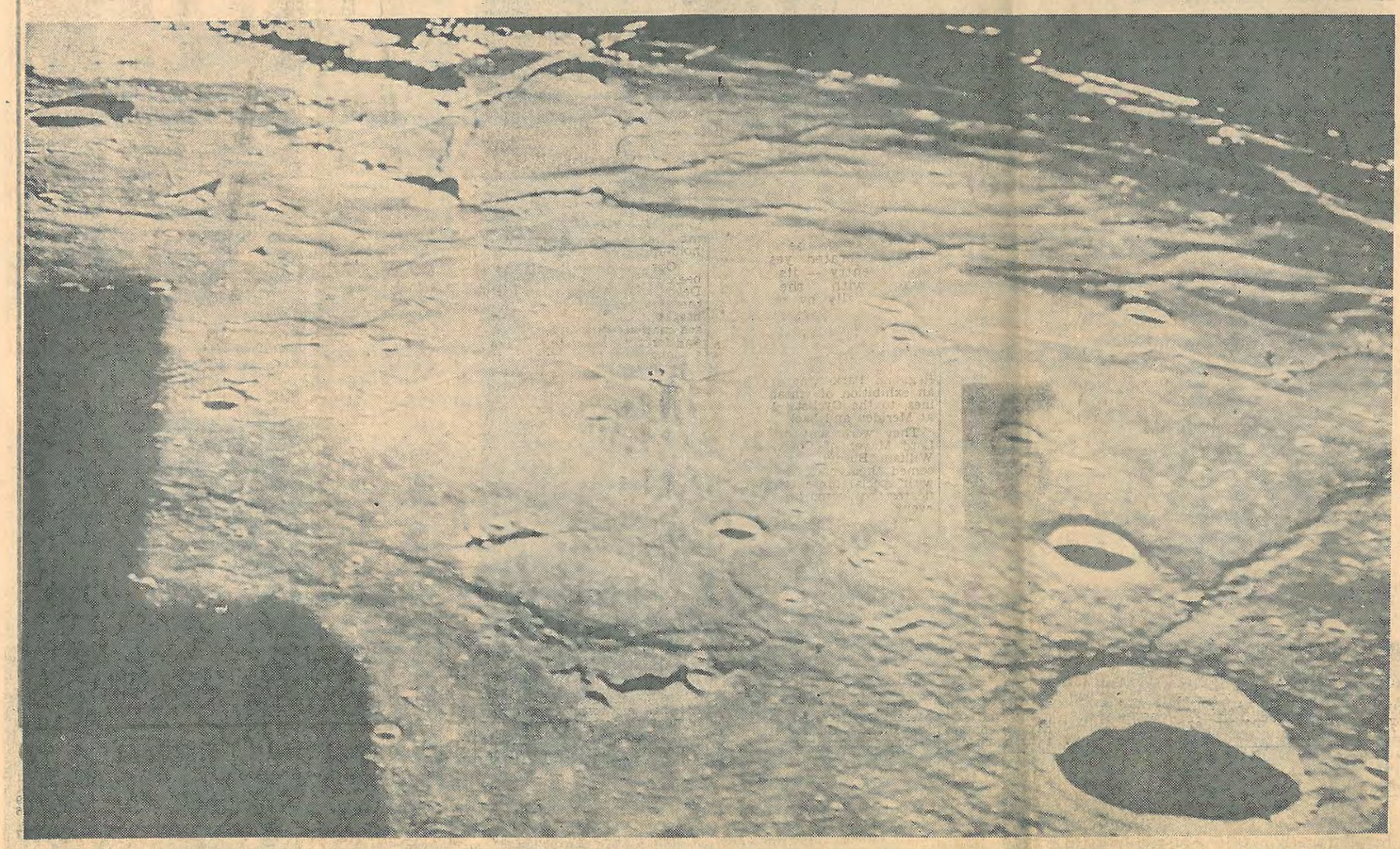
McLeaish—Unofficial time off the surface at 111:20:32.

Aldrin (as Armstrong came up into spacecraft) — You're rubbing up against me now. Now you're clear. Now move your foot and I'll get in the hatch.

Aldrin—O K, the hatch is closed and latched.

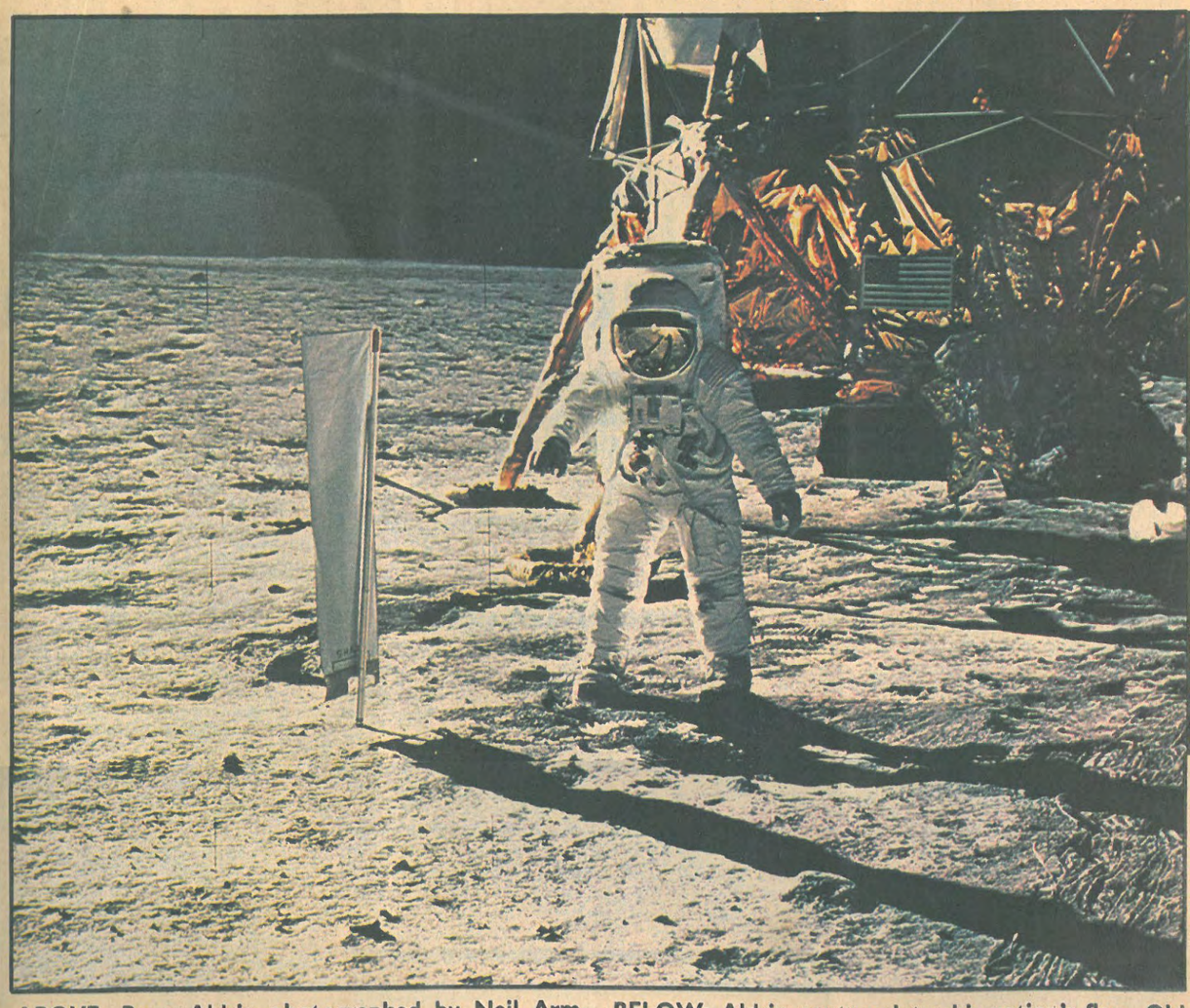
This photograph of Apollo 11 commander Neil Armstrong was taken inside the lunar module after the astronauts had returned from their moon walk and just before they began their pre-takeoff checks.

ABOVE: A series of the first pictures taken on the moon by a 16mm Mauer remote-controlled cine camera in Eagle, running at six to 12 frames per second. The top picture is one of the first photographic exposures made on the moon then innocent of footprints; Armstrong stepping on to the surface; then Armstrong testing the equipment hoist and the effects of reduced gravity; and the two astronauts setting up the U.S. flag. BELOW: One of the last shots from the lunar module of Tranquillity Base before take-off.



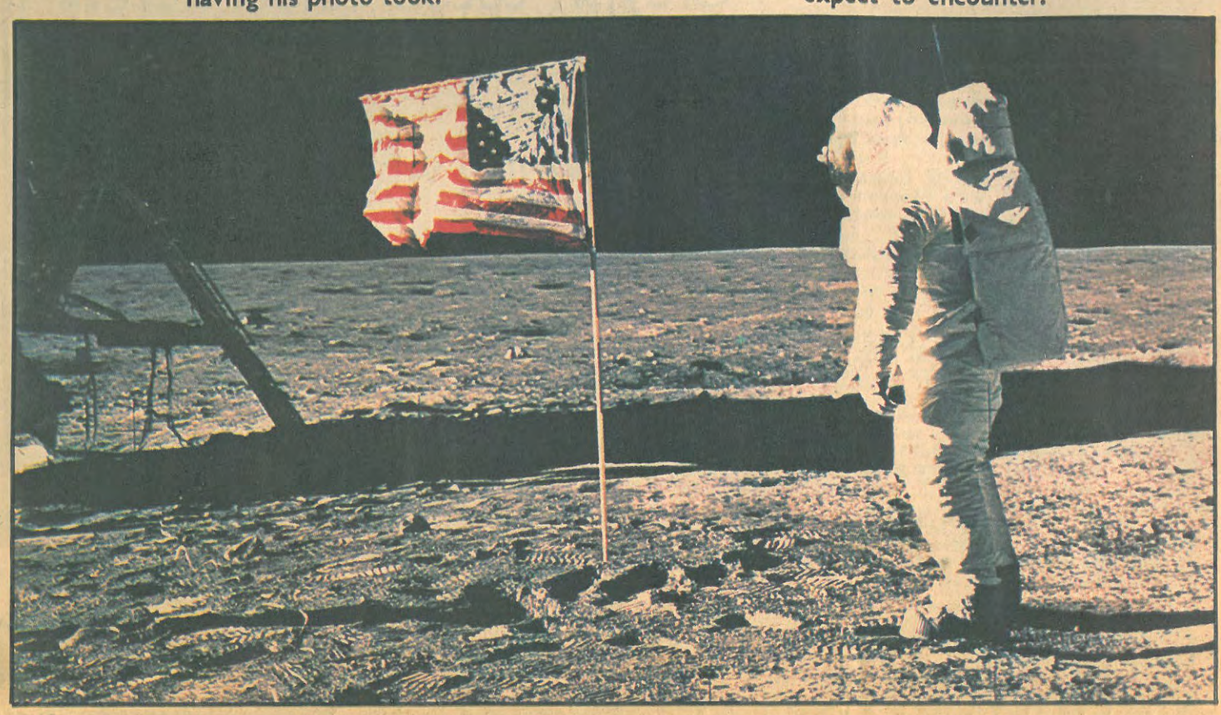
Close-up on the Sea of Tranquillity from the lunar module. It is the stark setting for Tranquillity Base — the landing site for Eagle, which casts its long shadow across the dusty, seamed and cratered surface in the low sunlight of the lunar early morning.

The dead surfaces of the moon and perhaps of Mars strengthen man's presumptuous belief that his planet is the most beautiful. So too does this picture of earth taken from Apollo 11, 114,000 miles into space, and by a happy piece of symbolism a break in the clouds focuses the eye on the cradle of civilisation. In the centre is the Red Sea with clouds reaching down to the Arabian Peninsula. Above and slightly to the right is the Persian Gulf. Down to it runs the Valley of the Euphrates. Off the North African coast Sicily is outlined to the right of the sharply-defined left-hand arm of the bay of Tunis. Further right again is Crete and further on still Cyprus, then the coastline of Israel, Lebanon and Syria. Extreme left of the visible area is the Sahara and, made tiny by perspective, the eastern and southern coasts of Spain.

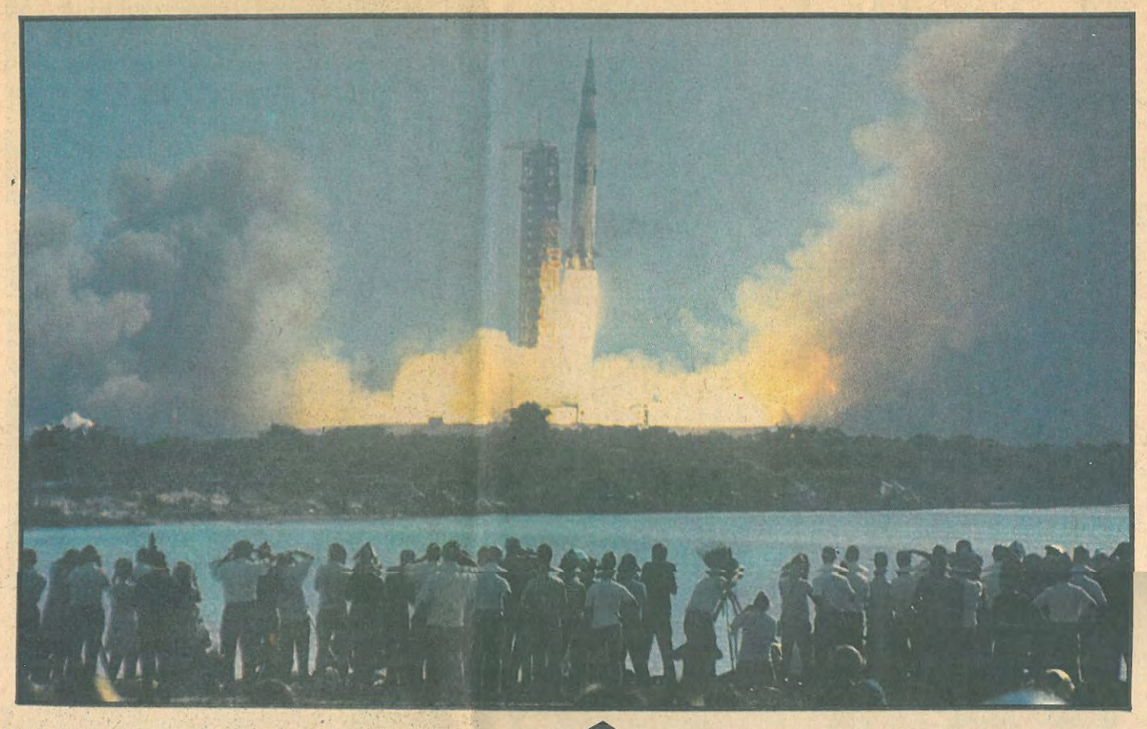


ABOVE: Buzz Aldrin photographed by Neil Armstrong. Behind him is the lunar module. Although he is engaged on setting up the solar wind composition experiment, his stance has somehow acquired the self-consciousness of one who knows he is "having his photo took."

BELOW: Aldrin contemplates his nation's flag. Old Glory is wired for support in the airless environment. The zombie-like appearance engendered by his space suit would delight a science fiction writer; he looks exactly the sort of creature one would expect to encounter.

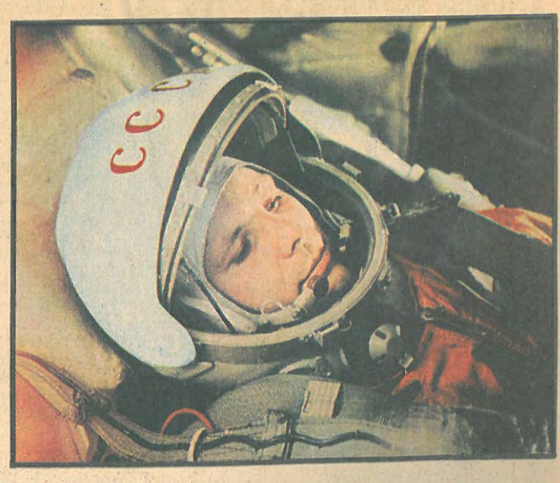


First steps on the journey–and first steps into outer space



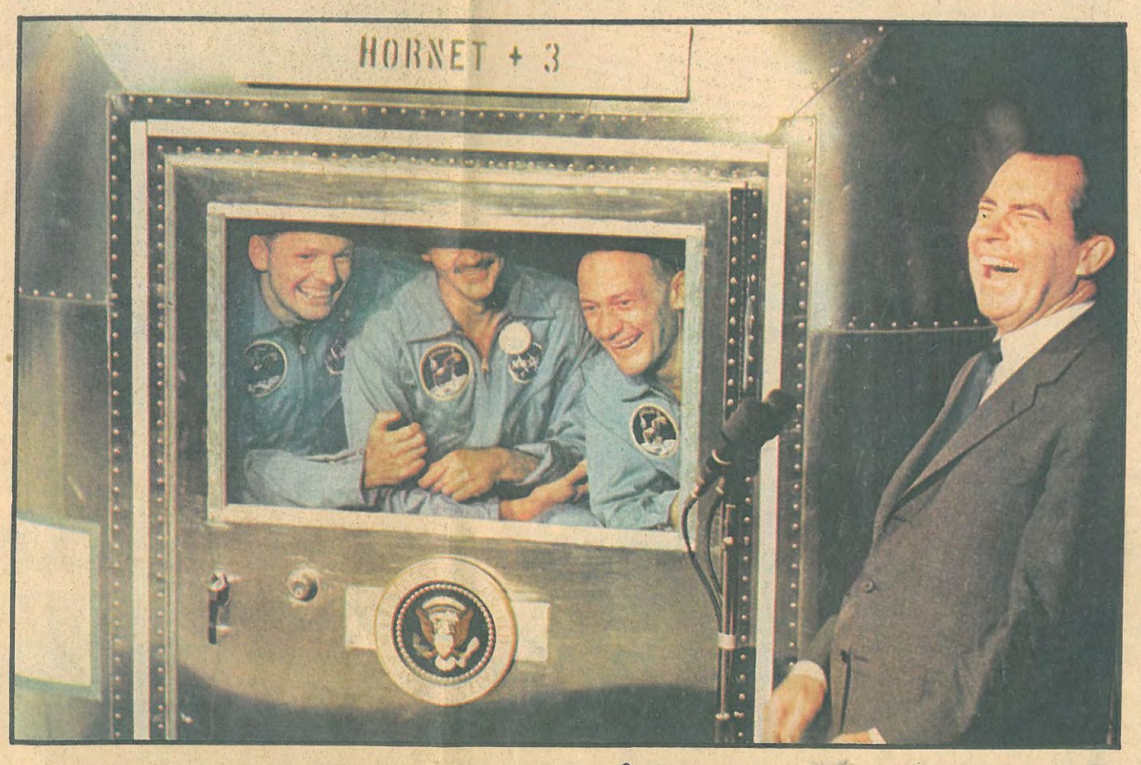
First steps on the journey: led by their commander, Mr. Neil Armstrong, the three Apollo 11 astronauts dressed in their pressure suits for blast-off begin — on foot — the most memorable journey in the history of mankind and the earth itself. The picture was taken on Wednesday, July 16.

"We have lift-off!" The giant Saturn V rocket, designed and built to hitherto unheard-of specifications solely for the Apollo journeys, rises above the Cape Kennedy launch pad. Clouds of incandescent gases pour out as the 2,700-ton mass strains towards the goal.



Yuri Gagarin in his Vostok spacecraft. He became the first man to be a satellite of the earth on the first orbital flight of 108 minutes on April 12, 1961. He was killed in an air crash in March, 1968.

John Glenn, the first American to orbit the earth — in a 4 hour 55 minute flight — photographed on the recovery ship after splashdown on February 20, 1962. America's dream had been brought to life at last after their humiliations.



The first two moon men in history with their command module pilot wait in a dinghy to be taken by helicopter to USS Hornet, the recovery ship, after the splashdown in the Pacific on July 24, while a frogman from the aircraft carrier reseals the spacecraft's hatch. They are wearing their biological isolation suits which they did not remove until they were in their portable quarantine quarters in Hornet.

The astronauts talk to President Nixon from their isolation unit aboard Hornet. They are Neil Armstrong (left), the first man to set foot on the earth's natural satellite, Edwin "Buzz" Aldrin (right), his lunar companion and (centre) Michael Collins, command module pilot, with the moustache he grew on the trip. He kept a lonely vigil in Columbia as Eagle swooped to the stark, inhospitable surface and back again.

Departure for the moon . . . and back to earth again

Valentina Tereshkova, the first woman in space, spent nearly three days in orbit in June, 1963. Shortly afterwards she married Cosmonaut Andrian Nikolayev, who had accomplished the first rendezvous mission in August, 1962, and the birth of their robust child allayed fears about radiation hazards in outer space—a danger the Russians had seemed particularly anxious about.

Printed and published by The Birmingham Post