



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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94  
251 pgs

# APOLLO 11 TECHNICAL CREW DEBRIEFING

(U)

JULY 31, 1969

PREPARED BY:  
MISSION OPERATIONS BRANCH  
FLIGHT CREW SUPPORT DIVISION  
VOL. I

CLASSIFICATION CHANGED TO  
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BY AUTHORITY OF E.O. 11652  
DATE 6/1/78  
5-11-78  
Stacy R. Salt

GROUP 4  
Downgraded at 3-year  
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07-31-69	MSC		R	AFO	(Title)	MSC	077



미국 항공우주국

기밀

251쪽

# 아폴로 11호 기 술 승무원 보고

(U)

1969년 7월 31일

작성자:

임무 운영부 비행 승무원 지원과 제1권

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그룹 4 3년 간격으로 등급  
하향; 12년 후 기밀 해제

이 자료 내  
전송 금지

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색인 데이터  
날짜

07-31-69 SC

#	T	PGM	주제	서명자	위치
	R	AFO	(Title)		077

COLLINS

I think particularly when you get into the later flights of extended EVA's and lunar activity, somehow the crew must place themselves in a frame of mind of looking on the separation of the LM as the beginning of the flight plan and to relax, get plenty of sleep, and conserve their energies in all the events leading up to that point. To arrive in lunar orbit tired can create problems and it's possible to do that if you don't approach it in the right frame of mind.

ARMSTRONG

I think Mike's hit the nail on the head. We did precisely that. We got a lot of rest and got into lunar orbit eager to go to work and that's a particularly fortunate position to be in.

COLLINS

This is something we've talked about before the flight and I don't know how you can get yourself in that frame of mind but I think it is a frame of mind. You have to get yourself convinced that there will be a nice relaxing couple of days going to the moon.

ALDRIN

The first unusual thing that we saw I guess was 1 day out or something pretty close to the moon. It had a sizeable dimension to it, so we put the monocular on it.

COLLINS

특히 연장된 EVA와 달 활동의 후반부에 들어가면, 승무원은 IM의 분리를 비행 계획의 시작으로 보고 긴장을 풀고 충분히 잠을 자며 그 시점까지의 모든 사건에서 에너지를 절약해야 한다는 마음가짐을 갖게 되는 것이 중요하다고 생각합니다. 피로한 상태로 달 궤도에 도착하면 문제가 생길 수 있고, 올바른 마음가짐으로 임하지 않으면 그렇게 될 가능성이 있습니다.

ARMSTRONG

마이크 말이 정곡을 찔렀다고 생각합니다. 우리는 바로 그렇게 했습니다. 많은 휴식을 취했고 달 궤도에 들어갈 때 일할 준비가 되어 있었으며, 그것은 특이운이 좋은 상황이었습니다.

COLLINS

이것은 비행 전부터 우리가 이야기해 온 것이고, 어떻게 그런 마음가짐에도 달할 수 있는지는 잘 모르겠지만 저는 그것이 하나의 마음가짐이라고 생각합니다. 달로 가는 동안 며칠간 편안하게 쉬 수 있으리라는 것을 스스로 확신해야 합니다.

ALDRIN

우리가 본 첫 번째 이상한 것은 아마 달에서 하루 정도 떨어진 곳이나 그에게 가까운 거리에서였던 것 같습니다. 그것은 상당한 크기를 가지고 있어서 단안경을 들이대 보았습니다.

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COLLINS How'd we see this thing? Did we just look out the window and there it was?

ALDRIN Yes, and we weren't sure but what it might be the S-IVB. We called the ground and were told the S-IVB was 6000 miles away. We had a problem with the high gain about this time, didn't we?

COLLINS There was something. We felt a bump or maybe I just imagined it.

ARMSTRONG He was wondering whether the MESA had come off.

COLLINS I don't guess we felt anything.

ALDRIN Of course, we were seeing all sorts of little objects going by at the various dumps and then we happened to see this one brighter object going by. We couldn't think of anything else it could be other than the S-IVB. We looked at it through the monocular and it seemed to have a bit of an L shape to it.

ARMSTRONG Like an open suitcase.

ALDRIN We were in PTC at the time so each one of us had a chance to take a look at this and it certainly seemed to be within our vicinity and of a very sizeable dimension.

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COLLINS 우리는이물체를어떻게본거죠?그냥창밖을내다봤는데거기있었나요?

ALDRIN 네,그리고우리가확신은못했지만그것이S-IVB일지도모른다고생각했습니다.지상에연락했더니S-IVB가6000마일떨어져있다고들었습니다.그무렵고이득안테나에문제가있었죠,그렇지않았나요?

COLLINS 뭔가있긴했어.우리가충격을느꼈거나아마내가그냥상상했을수도있어.

ARMSTRONG 그는MESA가떨어졌는지아닌지궁금해하고있었다.

COLLINS 우리는아무감정도느끼지못했던것같아.

ALDRIN 물론우리는여러배출물사이로지나는온갖작은물체들을보고있었고그때우연히이보다더밝은물체가지나가는것을보았습니다. S-IVB외에는다른무엇일까생각할수없었습니다.단안경으로들여다보니약간L자모양을하고있는것같았습니다.

ARMSTRONG 마치열린여행가방같아.

ALDRIN 그때우리는PTC중이어서우리각자이물체를볼기회가있었고확실히우리근처에있으면서꽤큰크기인것처럼보였습니다.

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ARMSTRONG We should say that it was right at the limit of the resolution of the eye. It was very difficult to tell just what shape it was. And there was no way to tell the size without knowing the range or the range without knowing the size.

ALDRIN So then I got down in the LEB and started looking for it in the optics. We were grossly misled because with the sextant off focus what we saw appeared to be a cylinder.

ARMSTRONG Or really two rings.

ALDRIN Yes.

ARMSTRONG Two rings. Two connected rings.

COLLINS No, it looked like a hollow cylinder to me. It didn't look like two connected rings. You could see this thing tumbling and, when it came around end-on, you could look right down in its guts. It was a hollow cylinder. But then you could change the focus on the sextant and it would be replaced by this open-book shape. It was really weird.

ALDRIN I guess there's not too much more to say about it other than it wasn't a cylinder.

ARMSTRONG 눈의분해능한계바로지점에있었던것이라고말해야할것같아요.정확히어떤모양인지판단하기가매우어려웠어요.거리를알지못하면크기를,크기를알지못하면거리를알수있는방법이전혀없었어요.

ALDRIN 그래서저는LEB로내려가광학장치를통해그것을찾아보기시작했어요.초점이맞지않았을때우리가본것은원통으로보였기때문에크게오도되었어요.

ARMSTRONG 아니,사실두개의반지.

ALDRIN Yes.

ARMSTRONG 두개의반지.서로연결된두개의반지.

COLLINS 아니요,제눈에는속이빈원통처럼보였어요.두개의연결된고리처럼보이지않았어요.이물체가빙글도는모습을볼수있었고,끝이정면으로들어왔을때는그내부를바로들여다볼수있었어요.속이빈원통이었죠.그런데육분의초점을바꾸면이게펼쳐진책모양으로바뀌었어요.정말이상했어요.

ALDRIN 제생각에는그것이원통이아니었다는것외에는딱히더할말이없네요.

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COLLINS

It was during the period when we thought it was a cylinder that we inquired about the S-IVB and we'd almost convinced ourselves that's what it had to be. But we don't have any more conclusions than that really. The fact that we didn't see it much past this one time period — we really don't have a conclusion as to what it might have been, how big it was, or how far away it was. It was something that wasn't part of the urine dump, we're pretty sure of that.

Skipping ahead a bit, when we jettisoned the LM, you know we fired an explosive charge and got rid of the docking rings and the LM went boom. Pieces came off the LM. It could have been some Mylar or something that had somehow come loose from the LM.

ALDRIN

We thought it could have been a panel, but it didn't appear to have that shape at all.

COLLINS

That's right, and for some reason, we thought it might have been a part of the high gain antenna. It might have been about the time we had high gain antenna problems. In the back of my mind, I have some reason to suspect that its origin was from the spacecraft.

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COLLINS

그것이실린더라고생각하던시기에S-IVB에대해문의를했었고,우리가거의그것일거라고확실했었습니다.하지만사실그이상으로결론을내린것은없습니다.우리가그모습을그한번의시간대이상으로보지못했다는사실로—그것이무엇이었는데,얼마나 컸는지,혹은얼마나떨어져있었는데대해결론을내릴수없습니다.그것은소변배출물의일부가아니었던것같고,우리는그점에대해꽤확신하고있습니다.

조금건너뛰어말하자면,우리가IM을분리했을때,폭발장치를발사해서도킹링들을제거했고LM이평하고터졌습니다. IM에서조각들이떨어져나왔습니다.어쩌면IM에서어떻게든풀려나온마일러같은 것이었을수있습니다.

ALDRIN

우리는그것이패널일수도있다고생각했지만,전혀그런형태로보이지는않았습니다.

COLLINS

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ALDRIN

The other observation that I made accumulated gradually. I don't know whether I saw it the first night, but I'm sure I saw it the second night. I was trying to go to sleep with all the lights out. I observed what I thought were little flashes inside the cabin, spaced a couple of minutes apart and I didn't think too much about it other than just note in my mind that they continued to be there. I couldn't explain why my eye would see these flashes. During transearth coast, we had more time and I devoted more opportunity to investigating what this could have been. It was at that point that I was able to observe on two different occasions that, instead of observing just one flash, I could see double flashes, at points separated by maybe a foot. At other times, I could see a line with no direction of motion and the only thing that comes to my mind is that this is some sort of penetration. At least that's my guess, without much to support it; some penetration of some object into the spacecraft that causes an emission as it enters the cabin itself. Sometimes it was one flash on entering. Possibly departing from an entirely different part of the cabin, outside the field of view. The double flashes appeared to have an entry and then impact on something such as the struts. For a while, I thought it might have been

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6-37

ALDRIN

내가한다른관찰은서서히누적된것이었다.첫날 밤에봤는지는모르겠지만둘째밤에는확실히봤다.나는모든불을끄고잠들려하고있었다.선실 안에서몇분간격으로일어나는작은섬광이라고 생각한것들을관찰했고,그것들이계속있다는것만마음속으로메모했을뿐그다지많이생각하지는않았다.왜내눈에그런섬광이보이는지설명할수없었다.지구횡단비행동안우리는시간이더있었고나는이것이무엇일수있는지조사할기회를더많이가졌다.그때나는두차례에걸쳐단일섬광을보는대신약1피트정도떨어진지점에서이중섬광을볼수있다는것을관찰할수있었다.다른때에는방향성이없는선을볼수있었는데,내게떠오르는유일한생각은이것이어떤침투의일종이라는것이다.적어도별다른증거없이내가추측하는바는이것이우주선에어떤물체가침투하면서선실내부로들어올때방출을일으키는어떤침투라는것이다.때로는들어올때하나의섬광이있었다.아마도시야밖의전혀다른부분에서떠나는것일수도있다.이중섬광은지지대같은것에진입한뒤무엇인가에충돌하는것처럼보였습니다.잠시동안,나는그것이\_\_CONFIDENTIAL였을지도모른다고생각했습니다

~~CONFIDENTIAL~~ALDRIN  
(CONT'D)

some static electricity because I was also able, in moving my hand up and down the sleep restraint, to generate very small sparks of static electricity. But there was a definite difference between the two as I observed it more and more. I tried to correlate this with the direction of the sun. When you put the window shades up there is still a small amount of leakage. You can generally tell within 20 or 30 degrees the direction of the sun. It seemed as though they were coming from that general direction; however, I really couldn't say if there was near enough evidence to support that these things were observable on the side of the spacecraft where the sun was. A little bit of evidence seemed to support this. I asked the others if they had seen any of these and, until about the last day, they hadn't.

ARMSTRONG

Buzz, I'd seen some light, but I just always attributed this to sunlight, because the window covers leak a little bit of light no matter how tightly secured. The only time I observed it was the last night when we really looked for it. I spent probably an hour carefully watching the inside of the spacecraft and I probably made 50 significant observations in this period.

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올드린(계속)

내손을수면고정장치위아래로움직일때아주작은정전기불꽃이발생하기도해서약간의정전기가있었습니다.그러나관찰을거듭할수록둘사이에는확실한차이가있었습니다.나는이것을태양의방향과연관지으려시도했습니다.창문차양을올려도소량의빛이새어들어옵니다.일반적으로20~30도이내로태양의방향을알수있습니다.그것들이대체로그방향에서오는것처럼보였습니다.그러나이들이태양이비치는우주선쪽에서관찰된다는것을뒷받침할만한충분한증거가있는지는정말로말할수없었습니다.약간의증거가이를뒷받침하는듯했습니다.다른사람들에게도이런것을본적이있는지물어봤는데,마지막날즈음까지는그들중누구도본적이없었습니다.

ARMSTRONG

버즈,나는약간의빛을본적이있었지만창문덮개는아무리단단히고정해도약간의빛이새어나온다고항상햇빛탓으로돌렸습니다.내가그것을관찰한유일한때는우리가진짜로찾아본마지막밤이었습니다.나는아마도한시간정도우주선내부를주의깊게관찰했고이기간에아마도50건의중요한관찰을했을것입니다.

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ALDRIN

Sometimes a minute or two would go by and then you'd see the two within the space of 10 seconds. On an average, I'd say just as a guess it was maybe something like one a minute. Certainly more than enough to convince you that it wasn't an optical illusion. It did give you a rather funny feeling to contemplate that something was zapping through the cabin. There wasn't anything you could do about it.

ARMSTRONG

It could be something like Buzz suggested. Mainly a neutron or some kind of an atomic particle that would be in the visible spectrum.

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ALDRIN

때때로 1~2분이 지나가면 10초안에 두개가 보였다. 평균적으로, 그냥 추측하자면 아마 분당 한 개 정도였던 것 같다. 분명 착시가 아니라고 확신할 만큼 충분히 자주 일어났다. 그것이 객실을 관통하고 있다는 생각을 하니 꽤 이상한 기분이 들었다. 어쩔 수 없는 일 이 아니었다.

ARMSTRONG

버즈가 제안한 것과 비슷한 것일 수도 있다. 주로 중성자나 가시광선 영역에 있는 어떤 종류의 원자입자일 것이다.

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1969년7월31일

작성자:임무운영부비행  
승무원지원과제2권

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급이하향조정되며, 12년  
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INDEXING DATA

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07-31-69	MSX			APD	(Site)	MSX	078

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21.0 VISUAL SIGHTINGS

ARMSTRONG Most of the items in Section 21, Visual Sightings, have been previously reported.

21.4 TRANSLUNAR AND TRANSEARTH FLIGHT

ALDRIN There was only one minor observation returning from the Moon. Looking back at it, at a time after Mars had passed behind the Moon, there was one time period where I imagined that the image of Mars was coming from a region where it couldn't come from, because it was in a dark portion of the Moon. This obviously was an optical illusion of some sort.

ARMSTRONG I suspect that it was, in fact, just immediately adjacent to the horizon.

ALDRIN We must have looked at it immediately after it had come from the back side.

ARMSTRONG Yes.

21.5 LUNAR ORBIT

ALDRIN In lunar orbit, following ascent, we did note and mention to the ground that approaching CDH when the Earth came up above the lunar horizon, I observed what appeared to be a fairly bright light source which we tentatively ascribed

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21.0 시각적 목격 사항

ARMSTRONG 21장, 시각적 목격의 대부분 항목은 이전에 보고된 바 있습니다.

ALDRIN 21.4 달 너머 및 달에서 지구로의 비행 달에서 귀환할 때 한 가지 사소한 관찰이 있었습니다. 화성이 달의 뒤로 지나간 시점 이후로, 화성의 영상이 있어서 는 안 되는 영역, 즉 달의 어두운 부분에서 오는 것처럼 보였던 시기가 한번 있었습니다. 이것은 분명 어떤 종류의 착시였습니다.

ARMSTRONG 저는 사실 그것이 지평선 바로 인접한 곳에 있었던 것 같다고 생각합니다.

ALDRIN 우리는 그것이 뒤쪽에서 온 직후에 바로 보았음에 틀림없다.

ARMSTRONG Yes.

ALDRIN 21.5 달 궤도 상승 후 달 궤도에서 우리는 지상 관제에 지구가 달 지평선 위로 떠오를 때 CDH 에 접근하면서 비교적 밝은 광원으로 보이는 것을 관찰했다고 언급했습니다. 우리는 이를 잠정적으로 귀속시켰습니다. — 기밀

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(CONT'D)

to a possible laser. That seemed to be the best possible explanation until we were coming back in the command module approaching the Earth and were able to observe something that gave about the same appearance. When putting the monocular on the light source, it appeared as though it was the reflection of the Sun from a relatively smooth body of water such as a lake. I think we've revised our initial conclusion as to what the source of that light was that we saw coming from the Earth. If no one owns up to having beamed the laser toward the Moon at that time, it was more probably a reflection off a lake. I still think it's an unusual phenomenon, at that distance, to see so bright a source of light. In the film, it didn't appear as though this was going to show up at all. The Earth was too bright.

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ALDRIN (CONT'D)

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