

Missiles and Spaceflight

matters in which it is possible to link the efforts of our country with those efforts of other countries. These matters include the use of communication stations belonging to various countries to ensure the flight of both Soviet and American spaceships and space vehicles, exchange of information about the results of spaceflights, etc. Our group flight has shown that it is fundamentally possible to carry out a joint flight of a group of ships belonging to different countries—in other words, an international space expedition.

Academician Anatoli Blagonravov: It is a customary question at press conferences such as this to ask what the Soviet Union's immediate plans are in space exploration; so, anticipating the question, I can tell you that the direction of these plans, their trend, is known. New efforts will be made to study further the physics of outer space; there will be further study of atmospheric phenomena in order to improve our weather services; there will be further spaceflights by automatic interplanetary stations in which, as we progress further, human beings will take direct part; finally, work will be conducted in experimental astronomy. As far as more specific information in reply to this question is concerned, I should like to say that every new success, any new results, make it possible to improve and specify the proposed plans. There is no doubt that the latest cosmonauts' flight, with the evaluation of all the flight material, will lead to further changes with the aim of improving, and perhaps speeding up, proposed research. In due course new achievements of our science and technology will excite the world again.

Questions to Lt-Col Popovich

How did you land—in the ship or separately?—Like Herman Titov and Andrian Grigoryevich, I landed beside the ship.

At what distance from each other did you land?—About 200km.

Will the next space flight be like this one, and will a group of spacemen be prepared for further flights in space?—Well, I must say that an analysis of all the materials of our group flight will show whether it is necessary to repeat this kind of flight, or whether we can go further on to something else.

What condition are the spaceships in now? Could they be used for another flight?—If I were given permission, I would be happy to make many more flights in my Vostok 4.

What was the minimum distance between the spaceships?—The minimum distance between the spaceships was about five kilometres.

Why has the weight of the Vostok 3 and the Vostok 4 spaceships not been made public?—I am glad to supply the information. The weight of each spaceship, Vostok 3 and Vostok 4, was about five tons.

Vostok 3 and Vostok 4 did not land where the previous Vostok 1 and Vostok 2 landed. Is this connected with the great progress made in landing techniques?—The landing was made strictly according to programme.

Was it envisaged in the programme that the two spaceships should be linked up, that is, that a rendezvous in space should be effected; and was it intended at first to launch the two spaceships at the same time?—The task of linking spaceships in space was not assigned to us. The launching of the spaceships was made strictly in accordance with the programme worked out on the ground.

Questions to Maj Nikolayev

Did the spaceships come really close to one another? Were the cosmonauts able to bring the spaceships close to each other?—The flight programme did not provide for such manoeuvres and we did not carry them out. We did not approach each other closer than approximately five kilometres.

Were the spaceships controlled from the ground or manually?—The spaceships were controlled both from the ground and manually by us.

On how many occasions did you actually leave your seats in the capsules, and what kind of scientific experiments did you carry out on those occasions?—Every day we carried out the experiment of unfastening ourselves and leaving our seats, and we were out of our seats for a fairly long time. Each of these experiments took about one hour. We carried out many operations while we were out of our harness. I maintained communication with Pavel Romanovich

and with the ground, and carried out various tests. I conducted various observations and carried out operations with all the instruments on board.

Did you take any photographs during your flight, did you use your cine camera, and did you know at which moment television viewers on the ground would be seeing you?—During my flight I took pictures of the Moon, I took pictures of the rising Sun—which is a beautiful spectacle—and of coastlines. Yes, I knew when the television systems were going into operation. I knew everything that was being done from the instruments on board. Then, too, the cabin of the spaceship would be floodlit for the television sessions . . .

How did the receiving and transmitting apparatus function in two-way communication in space?—There was excellent communication between the spaceships, and audibility was particularly good in the southern hemisphere at about 55-60° South. We were closest to each other at that point. Audibility there was as good as if we were standing right next to each other, as we are now.

Was there room in your spaceship for another cosmonaut, and how much longer could you have continued the flight?—Vostok 3 was designed for one person. I could have continued the flight longer, but my planned assignment provided for landing after four days, and I fulfilled my assignment.

Questions to Prof Yazdovsky

What was the sum radiation dose picked up by the cosmonauts during their flights?—Andrian Nikolayev received a sum dose in the region of 50 millirads, and Comrade Popovich in the region of 36 millirads.

Questions to Prof Keldysh

Could you name the size and weight of the spaceships?—Well, the ship coincides approximately with Vostok 1 and Vostok 2 in weight and dimensions; the weight is about five tons.

Will western correspondents be admitted to the next launching?—Well, I can only say that the Vostok spaceship is put into orbit by means of a rocket. We are using this rocket and intend to use it for peaceful purposes. But, while certain politicians still call for war, we must keep this most perfect and most powerful rocket for defence and we cannot divulge these secrets. Therefore, let us agree that, if you succeed in convincing your Government by the time of the next launching to sign a disarmament treaty, then I together with the cosmonauts will undertake to persuade our Government to allow you to attend the next launching.

What was the extent of radiation measured on the instruments of the Soviet spaceships Vostok 3 and Vostok 4 from the explosion of the US atomic bomb at a high altitude?—This question is serious and natural. Naturally, without knowing the conditions resulting after the American explosion, we should never have decided to send cosmonauts into orbit. I must say that, as you know, a large number of satellites, unmanned, with automatic apparatus—satellites launched by the Soviet Union—are at present flying in space, and on these satellites are instruments which measure various physical parameters in space and, in particular, we are sufficiently well informed about the situation which arose after the American explosion. I must say that for a long time—for many days after the explosion—it was impossible to send a man into space. Moreover, I must say that at a higher orbit a man cannot be sent into space even now. At the orbit which was selected in this case all the consequences which followed the moment of launching were known beforehand . . .

When do you think a landing on another planet will become possible? Which planet is it going to be first? Can such a flight be made direct from the Earth or is a space platform essential? Are flights to other planets possible and when can this be done? Is a direct flight to other planets possible, or is a space platform needed?—Interplanetary flights are a long and complex project. Our scientists have various projects. Some projects envisage space platforms; others make it possible to reach other planets by different means. Which will be the first planet man will set foot on? It is still difficult to predict this, for, in order to send a man to another planet, one must be certain that he will return. For this one must know the physical conditions on other planets . . . We consider that, at first, automatic interplanetary stations will reach these planets and give us the information needed in order to send a man up safely. Later a man will be sent, and it will then be determined in what way this will be possible.