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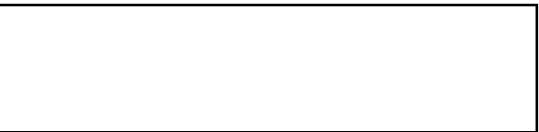
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1. There were five Soviet scientists at the Groningen Conference:

- Ambartsumyan, Prof Viktor Amasaspovich
- Parento, Prof P D
- Khukarkin, B V
- Melnikov, O A
- Kulikovskiy, P G

These men are certainly among the foremost Soviet astronomers, particularly with respect to galactic theory and research. Ambartsumyan is the outstanding astronomer in the USSR, a very brilliant scientist who can fully hold his own with any other astronomer in the world. Khukarkin was the Communist Party member of the group, the person whose thinking was most influenced by dogma. There were no secret police representatives accompanying the Soviet group.

Instrumentation:

2. The Soviets are not going to attempt to construct a large reflecting telescope mirror of optical glass. Ambartsumyan indicated that they would have great difficulty in producing a large-size mirror comparable to the 200-inch mirror in the US. Soviet industry is at present incapable of this technical feat, and some time will be required for it to develop the requisite capability. Khukarkin also indicated at the Seventh General Assembly of the International Astronomical Union (IAU) in Rome, Italy [September 1952], that the Soviets are experimenting with mirrors made of metal rather than optical glass. The work of the Optical Institute in Moscow has apparently been a disappointment in this particular assignment, for they were supposed to study large-size US mirrors of optical glass and develop the capability to duplicate or even improve on them. Also, in September 1952, [redacted] two Germans who had just returned from a three-year contract stay at the Jena [Germany (Soviet Zone)] works of Carl Zeiss. They indicated that this

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plant was exclusively concerned with small optics, and thus did not contribute to the Soviet capability to manufacture large mirrors.

3. However, the Soviets (eg, (fnu) Klasniak) are working on the use of the image convertor tube for astronomical observation. Employing infrared light and in general the principle of the television tube, this technique probably offers the greatest hope of significantly extending astronomical observation. The USSR is at the forefront in this work, as advanced as the work of (fnu) Lallemand in France.

Radio-Astronomy:

4. Ambartsumyan was asked directly whether there was active experimental work on radio-astronomy going on in the USSR, perhaps by such a scientist as (fnu) Skhlowsky. He gave an honest answer in the negative, saying that Soviet industry was not in a position where it could release radar-electronic experts to the astronomers. As in other countries, the pool of trained radar scientists is too small. Hence, current Soviet work [1953] in radio-astronomy is exclusively analytical and theoretical, utilizing the experimental data obtained by others (mainly the US, UK, and Australia).

Extent of Astronomical Activity:

5. In the discussion of a future program of research, the Soviets indicated they would search for all the variable stars in the Northern Kaptyn areas of the sky. The question was raised whether such an ambitious program, on top of an already extensive program of astronomical research, would not mortgage the work of many prominent scientists not only for the present but even for at least a generation to come. Not at all, was the reply. Khukarkin pointed out that the leading Soviet astronomers have as many as 50 assistants and computers, and that sufficient personnel were available to make their search for variable stars well within their resources, without excluding other significant research. [REDACTED] M G J Minnaert, a German astronomer invited to the USSR last year who visited Moscow, Leningrad, the Ukraine, and other centers; he confirmed the large number of exceedingly well trained astronomers and students now working in the USSR.
6. [REDACTED] the Soviets want to make a mark in science in general, and certainly in astronomy. In their urge they are tending somewhat to put science on a conveyor belt. But make no mistake, there is not the slightest doubt [REDACTED] that Soviet science is strong now [1953] and will soon be very strong indeed. There is no longer any published work of obviously poor quality. 25X1
7. There is a deliberateness of effort which is quite impressive and must reflect important policy decisions and the establishment of means of implementation. [REDACTED] At the IAU Assembly in Rome, [September 1952] the Soviet delegation included a very attractive and brilliant young woman as interpreter. Her laughter and easy manner were in contrast with the inhibited mood of the other (male) delegates. She was fluent in many languages, and translated from one to the other with ease. [REDACTED] this young woman, a Miss (fnu) Massevitch, [REDACTED] five years previous she had been working in a factory - an ordinary factory employee. Her ability in mathematics and generally exceptional intelligence were spotted in some form of extra or adult education, and she was given the equivalent of a US high school education in two years, and a university and graduate school education in approximately three. That she was a worthwhile selection is shown by her brilliance; [REDACTED] hammering away at (fnu) Hoyle of the UK until she literally forced him to admit that he had not adequately considered some rather basic point with respect to his theories relating to the origin of the universe, and would have to think it out. The point here is that apparently the Soviets have effective methods of continually combing the ranks for people who show scientific promise, and of seeing that they maximize their potentialities. Massevitch is now [September 1953] working under Khukarkin. 25X1

Astronomy and Scientific Dogma:

8. About a year and a half ago [1951], there apparently was something in the way of an attempt to dogmatize astronomy. Vladimir O Smidt, Commissar of Northern Transport

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(or some such title) and one of the older minor pillars of the Communist Party, was utilizing dialectic materialism arguments to buttress very weak scientific theories. The USSR Academy of Sciences arranged for a debate attended by some 300 scientists, and Smid was firmly squelched. [REDACTED] this will leave astronomy relatively free from any attempts at dogma for some time to come. To be true, astronomy papers usually begin with the paragraph or two praising Stalin or what have you, but then the author quickly gets down to presenting and discussing his results in purely scientific terms. This political nod or lip service paid in scientific papers is, of course, a common phenomenon.

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9. Individuals may be significantly affected by dogma or political concerns as the case may be. Take the case of Khukarkin, a Party member. At the discussion on stellar evolution at the IAU Assembly in Rome [September 1952], it was surprising to find such a complete avoidance by the Soviet astronomers of any recognition of the significance or role of stellar energy. After the daytime session Khukarkin had an evening discussion with a western scientist who tackled him directly and [REDACTED] effectively, on why stellar energy was avoided. Khukarkin claimed that Soviet science could only accept empirical evidence, laboratory work. The western scientist asked him if he would accept the field of radioactivity as shown by laboratory work. Yes. Then, was it not also true that from this laboratory work, the oldest geologic rocks could be dated on the basis of the half-life theory of radioactivity - and was this not a significant scientific formulation. Khukarkin hemmed and hawed, agreed - and then strongly disagreed (no!), because according to the philosophy of Marx and Engel there can be no beginning nor end of the universe (and this would be a logical possibility developing from the radioactivity line of reasoning). Still later in the evening, when the interpreter for Khukarkin and the western scientist had gone to bed exhausted, and they were alone together in a small cafe in the wee hours of the morning, Khukarkin quickly changed to German since they could discuss matters directly and much more effectively. He said the Soviet astronomers admired what US scientists were doing in the field, but there was an insurmountable philosophical wall between them.

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10. But it must be emphasized that it is only a relatively small number of the political or administrative leaders of Soviet astronomy who do (or have to) adopt such unscientific attitudes. Astronomical science itself is little affected by this apparently necessary and artificial overtone. Take Khukarkin once again, despite the relative strength of his dogmatism, Miss Massevitch is doing excellent scientific work under his direction.

Psychological Attitudes:

11. It seemed clear at the Groningen meeting that the Soviet astronomers displayed an inferiority complex which, unlike some other attitudes, was never dispelled. They want to raise their work to a level equal or better than anywhere else in the world, and I for one believe their general demeanor will change at international gatherings when they develop greater self-confidence. They arrived at the meeting, as Soviet delegates do at most scientific gatherings, smarting under various real or imagined concerns, suspicions, and looking around for "the enemy". Because the Groningen meeting lasted a week and was held at a villa in the country (and without the presence of NKVD watchdogs), this typical Soviet behavior quickly changed. During the first day of formal discussion, the Soviets were constantly raising their hands to record a "communication", which usually had nothing whatsoever to do with the technical subject matter under discussion. These communications were really either general "gripes" or specific grievances, which they wanted to express both officially and personally, or announcements of accomplishments of which they were proud. They were still smarting over the rebuff represented by the Seventh IAU Assembly not being held in Moscow as originally planned. The western scientists present were concerned that this would continue throughout the meeting, but after the first day of such catharsis, nothing further was heard and scientific discussions proceeded uninterrupted.
12. Once the Soviet delegates absorbed the friendly scientific attitude of the western representatives, they gradually loosened up and even arranged and gave a party at which Ambartsumyan pulled out from under the table two large bottles of Soviet brandy he had brought with him. This was after the Soviets had been invited to have a drink on the

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way back from a conducted tour of the Zuyder Zee, to which invitation they responded with pleasure after a bit of pushing. Ambartsumyan had four or five drinks at this time as if he had been missing alcoholic refreshment.

Cooperation:

13. Private talks were held on the use of the Russian language in scientific papers. The Soviet delegates said they would be satisfied if the US papers (published in the leading US astronomical journals) being sent to the USSR on an exchange basis, had added to them typewritten abstracts written by the author and translated into Russian. They even said that if there was difficulty in getting Russian-language typewriters for these appended abstracts, they would supply them. They did not ask for printed abstracts in Russian, acknowledging that this would be too costly. Reciprocally, the Soviets offered to add abstracts in English to their own astronomical papers sent abroad to the UK and US.
14. [redacted] this offer made by the Soviets at the Groningen meeting is official, for they apparently came fully prepared to make this commitment.

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Appearance of Delegation:

15. As at the IAU Assembly in Rome, the Soviet delegation was much better dressed than in previous years. At Rome, the shoes of the Soviets creaked so obviously with their newness as the delegation marched in, that a western delegate remarked succinctly: "Government issue". At Groningen, they were better dressed than in many moons. Whether this reflects a rising standard of living in the USSR or a greater emphasis on consumer goods, one can only presume.

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