

Copy for Dr. Mason  
AUG 7 1934

Report of the Chairman of the Observatory Council  
at Meeting of May 16, 1934

The Observatory Council, placed by the Trustees of the California Institute in full charge and control of the location, design, construction and operation of the 200-inch telescope and Observatory in all its departments and relationships, has recognized from the outset the heavy responsibility involved in this extensive undertaking. Beginning with an officially approved scheme of cooperation with the Carnegie Institution of Washington, from which it has profited greatly, the Council immediately enlisted the active cooperation of other leading men of science and engineers in this country and abroad. A report on the invaluable assistance rendered by the Mount Wilson Observatory has recently been sent to the President of the Carnegie Institution by a special committee of which Dr. Adams is chairman, and reports from the Observatory Council have been made from time to time to the Board of Trustees of the California Institute on the various phases of the project and the progress accomplished in each of them. The Rockefeller Trustees have also been kept informed.

In view of recent developments and the necessity of making early decisions regarding important questions now pending, it was decided several months ago that Dr. Adams, who has met with the Council from the beginning and has taken part in all its discussions, should be elected a regular member of this body. This decision was adopted by the Board of Trustees of the Institute, and has now been formally approved by the President of the Carnegie Institution, as shown by the following telegrams and letters:

Pasadena, California  
May 7, 1934

President John C. Merriam  
Carnegie Institution of Washington  
Washington, D.C.

Referring to the letter of Senator F. E. Walcott to Henry M. Robinson dated April twenty-fifth and in accordance with it the California Institute of Technology, wishing to promote the success of the project in which both institutions are so deeply interested asks your further cooperation by your approval of the appointment of Dr. Walter S. Adams, Director of the Mount Wilson Observatory as a member of the Observatory Council.

Robert A. Millikan  
Chairman of the Executive Council  
A. C. Balch  
President of the Board of Trustees.

May 9, 1934

Dr. John C. Merriam  
Carnegie Institution of Washington  
Washington, D.C.

My dear Dr. Merriam:

As you know, the California Institute of Technology is anxious to continue and extend the cooperation which it has long enjoyed with the Carnegie Institution, especially in connection with the 200-inch project. This project has now reached an advanced stage of development, and several

important questions are coming up for immediate action. For this reason it is desirable to have a representative of the Carnegie Institution, officially approved by yourself, as a member of the Observatory Council.

Because of his official position and his technical knowledge and experience, it seems to us peculiarly fitting that Dr. Walter S. Adams, Director of the Mount Wilson Observatory, should serve in this capacity. As a member of the Council he would afford a direct means of communication between the Council, the Mount Wilson Observatory, and the administration of the Carnegie Institution.

At a meeting of the Executive Council of the California Institute held on May 7th, the appreciation of the members of the Council for the cooperation of the Carnegie Institution was unanimously expressed and the request for your approval of the appointment by the Trustees of the Institute of <sup>Dr.</sup> Walter S. Adams' membership on the Observatory Council was made. A copy of this telegram is herewith enclosed. You will note that it follows the form suggested by Senator Walcott in his letter of April 25th to Mr. Robinson, a letter with which you are doubtless already familiar.

Cordially yours,

Robert A. Millikan

Washington, D.C.  
May 9, 1934

Robert A. Millikan, Chairman Executive Council  
A. C. Balch, President Board of Trustees  
California Institute of Technology  
Pasadena, California

Acknowledging your joint telegram of May seventh may I express appreciation of your statement relating to cooperation of Carnegie Institution in connection with development of the program for the two hundred inch telescope and for your suggestion regarding appointment of Doctor Walter S. Adams Director of Mount Wilson Observatory as a member of the Observatory Council established for control of this project. Appreciating the significance of this proposed relationship I am writing you today to the effect that I approve the proposal that Dr. Walter S. Adams Director of Mount Wilson Observatory and also Chairman of the Committee which the Carnegie Institution of Washington has set up for the special purpose of planning aid in this project be appointed a member of the Observatory Council.

John G. Merriam, President  
Carnegie Institution of Washington

Washington, D.C.  
May 9, 1934

Dr. Robert A. Millikan, Chairman of Executive Council  
Dr. A. C. Balch, President Board of Trustees

Washington, D.C.  
May 9, 1934

Dr. Robert A. Millikan, Chairman of Executive Council  
Mr. A. C. Balch, President Board of Trustees  
California Institute of Technology  
Pasadena, California

Gentlemen:

Let me thank you for your telegram of May seventh, in reply to which you will already have my telegram of May ninth. I appreciate your statement relating to cooperation of Carnegie Institution with California Institute in development of the program for the 200-inch telescope and for your suggestion regarding appointment of Dr. Walter S. Adams, Director of Mount Wilson Observatory, as a member of the Observatory Council established for control of this project.

Appreciating the significance of this proposed relationship, I am glad to approve the proposal that Dr. Walter S. Adams, Director of Mount Wilson Observatory and also chairman of the committee which the Carnegie Institution of Washington has set up for the special purpose of planning aid in this project, be appointed a member of the Observatory Council. You may be sure of our giving such aid as is possible through all of the activities of the Carnegie Institution.

Expressing again my appreciation of your communication, I am

Very truly yours,

John C. Merriam, President  
Carnegie Institution of Washington.

Henceforth we shall therefore have the advantage of Dr. Adams' membership in an official capacity.

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The Council understands and has approved the plan of the Corning Glass Works to cast a second 200-inch disc, as soon as the first disc (injured during the operation of casting by certain breaks in the mold) has cooled sufficiently to permit optical tests to be made (about June 1). The principal question now calling for action is the procedure to be followed in the design and construction of the telescope mounting.

As the Council is aware, much study has already been given to this problem. In harmony with the policy followed in all other branches of this undertaking, we decided at the outset to supplement our strong local group of men of science and engineers by leading experts elsewhere. In the case of the mounting we have consulted Messrs. Dunn and Jones of the J. G. White Engineering Corporation, Messrs. Swasey, Bliss and Burrell of the Warner and Swasey Company, the late Sir Charles Parsons of London, Dr. Frank B. Jewett, President of the Bell Telephone Laboratories, and Mr. W.E.S. Strong of New York. In 1929 Mr. Burrell, in consultation with Dr. Pease and other members of our Pasadena group, designed



an acceptable fork mounting, of which a small model was built. This left no doubt as to the feasibility of solving the problem, but as much time was at our disposal during the development of the mirror disc, Dr. Anderson and others continued the search for possible improvements. In consultation with Mr. R. Edgar of Los Angeles, Dr. Anderson initiated a new and promising solution, which was embodied in a definite design by Mr. Mark Serrurier, and built in our shop as a small working model. This contained several new features appearing in no previous type of telescope mounting, besides reducing materially the size and cost of the necessary dome. Our committee on the telescope mounting considered these features to be so valuable that it voted to include them in the final design. Dr. Pease then undertook a new study of the fork type of mounting, in the hope of modifying it so as to embody these features.

Meanwhile, on the advice of Dr. Jewett, Mr. W.E.S. Strong, an experienced engineer whose previous work had fitted him for an undertaking of this nature, was consulted informally. His proposed plan of procedure, as stated in a recent letter does not, however, meet with the approval of the members of the Observatory Council hitherto consulted. It is now offered for your consideration, with a statement of our needs, as explained in a letter to Dr. Jewett.

If this view of the case is accepted, we must evidently make another choice, as the Observatory Council has previously voted that we should not assume the task of designing the huge 200-inch telescope mounting solely with local talent. After consideration of the problem with Dr. Adams and Dr. Anderson, it is recommended that we attempt to make a satisfactory arrangement with the Warner and Swasey Company, the most experienced designers and builders of large telescopes in the world. The plan in view involves a visit of Mr. Burrell to Pasadena for consultation with our local group, the preparation of a new design embodying the best features of the several designs hitherto considered, and the construction of the telescope mounting under the supervision of Warner & Swasey Company. Machine tools large enough for this purpose apparently do not exist in this vicinity, and therefore it would be desirable to have the work done under expert supervision in eastern shops. Moreover, as Mr. Strong has rightly insisted, advantage must be taken of the design of all the progress made in recent years in methods of electric control, clock-drive, etc., which involves close cooperation of the designers with the best authorities in other eastern companies. From their headquarters in Cleveland and their acquaintance with all forms of modern engineering practice, the Warner & Swasey Company, long familiar with the astronomical requirements, would be very favorably situated to carry out our purpose in the most efficient possible manner.

George E. Hale.

May 16, 1934.