

# THE TRANSIT OF VENUS.

The Best Data Ever Secured for Calculating  
the Solar Parallax,

VERY GOOD WORK DONE IN NEW  
MEXICO.

Reports from Stations in the Southern Hemisphere Anxiously Expected—Curious Questions from Amateur Observers—Dr. Draper's Experiments With the Camera.

*Special Dispatch to the Cincinnati Gazette.*

NEW YORK, Dec. 7.—Local astronomers who made observations of the transit Wednesday with a more serious purpose than the gratification of curiosity were engaged to-day correcting the errors of the chronometers and making comparisons, preparatory to sending the results to Washington. They scanned the reports from many observations in the United States published in the papers with considerable satisfaction, and declared generally that so far as they afforded means of judging, data had been secured for a more complete and accurate calculation of the solar parallax than had yet been made. The full value of the observations can not be known, however, until the reports have been had from stations in the Southern Hemisphere and other distant parts of the earth. Many a well meaning layman Wednesday afforded diversion to the astronomers by inquiring within an hour after the last contact what were the new determinations concerning the distance of the sun. To one inquirer Prof. Coakley vouchsafed the information that the calculations on the transit of 1874 already filled a building, and were not yet completed.

"May I then hope that the calculations on to-day's event will be finished before I am translated to Venus or some other planet?"

"Oh, yes; you are a very young man yet."

Dr. John M. Draper's experiments with the camera were discussed with considerable interest. That they were only experiments Dr. Draper willingly admitted, and not only he, but all who witnessed the results attained, now regret that the plan did not occur to him sufficiently early to give him time to perfect his mechanism so as to make larger plates and secure absolute accuracy as to the time of exposure and other details. The plan which he followed, of filtering out all the rays except the blue from the light which entered the camera, by means of a cell of ammonium sulphate of copper, placed in front of the lens, is said to be entirely novel as applied to celestial photography. By excluding all but the actinic rays, Dr. Draper hoped to overcome the serious difficulty offered by the disturbances of the atmosphere, which frustrated numerous efforts to make pictures of the sun Wednesday. The chronographic signals sent out from Washington over the wires of the Western Union Telegraph Company were continued at noon to-day, and then suspended. The signals were given for two days before and one day after the transit, to enable observers to determine the errors of their chronometers.

SAN FRANCISCO, CAL., Dec. 6.—Prof. Davidson telegraphs from the station at Cerezo Yobsero, via Las Cruces, New Mexico, that the day opened beautifully clear. The sun was not one diameter above Organ Mountains when the first internal contact was observed, much later than the predicted time. The atmosphere at this low latitude was very unsteady. The atmosphere of Venus was seen outside the sun's limb. The second contact interval was satisfactorily observed, the atmosphere growing steady. The altitude of the sun was  $4\frac{1}{2}^{\circ}$ . Micrometer measurements were then made between the limbs of the sun and Venus, and these were satisfactory. During these measures the first group of six photograph plates was exposed, and gave sharp outlines, exhibiting the planet very well defined. After the planet had advanced one diameter on the body of the sun photograph plates were exposed in groups of six every eight minutes. These photographs are remarkably fine, and not a single hitch occurred throughout the whole series. While this work was being done micrometer measures of the polar and equatorial diameter of Venus were made with a double image micrometer in the equatorial and transit instruments. The meridian of the transit of the first limb of Venus and the last limb of the sun were observed. The photograph groups, which were finished in about twenty minutes before the third contact, give 216 splendid pictures. When the micrometer measures were made between the limb of the planet and of the sun the third contact interval was observed with great precision, the limbs of Venus and the sun being remarkably sharp and well defined after this contact. Part of the planet's disk beyond the sun's border was partly surmounted by a white circle of light during the last contact, which was also observed with great precision. The whole work has been an eminent success, and not a single item has been missed in the programme of the day's work.

CHICAGO, Dec. 7.—In order to secure satisfactory observations of the transit of Venus it was indispensable that the astronomers should have the exact Washington time wherever the transit was scientifically observed. The public will be interested to know that this was done, and that the Western Union Telegraph Company did the service free to all points, sending the time signals for three days, it requiring the almost exclusive use of the wires all over the country for nearly fifteen minutes each day. This is the last day that the transmission of these signals was necessary, and although the storms in the East and blizzards in the West have dismantled the wires, the service was arranged with infinite care and satisfactorily done. The following Western points where observations were successful were thus supplied with Washington time: Omaha, Sherman, San Francisco, El Paso, San Antonio, Ft. Selden, Denver, St. Paul, Madison, Wis.; Beloit, Prairie du Chien, St. Louis, Columbus, Mo.; Burlington, Davenport, Keokuk, Iowa City, Monmouth, Ill.; Ft. Scott, Kas.; Ft. Dodge, Ia.; Peoria, Hillsdale, Monroe, Mich.; Champaign, Ill.; Marietta, O.; Youngstown, Columbus, Steubenville, Northfield, Minn., Madison, Ind.

The observations were most thorough and satisfactory at Boston and San Antonio.

WASHINGTON, Dec. 7.—Prof. Hilgard, Superintendent of the Coast and Geological Survey, has received a report from Assistant Davidson, chief of the transit of Venus party at Ft. Selden, N. M., announcing the complete success of observations of all four contacts, 216 splendid photographs being obtained.

LONDON, Dec. 7.—The American observers in New Zealand obtained successful observations of the transit.

The American observing party at Wellington, New Zealand, took 236 photographs of the transit.

MELBOURNE, Dec. 7.—The transit of Venus was successfully observed here and at Cape Town, New Zealand, Tasmania, and New South Wales. Thirty-three photographs were obtained at Melbourne. The observations at Queensland and Sydney were unsuccessful.

CITY OF MEXICO, Dec. 7.—The weather throughout the country yesterday was favorable for satisfactory observations of the transit.

PANAMA, Dec. 7.—The transit was distinctly seen here.