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DESCRIPTION OF BUILDING AND EQUIPMENT

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Chapter 1-Introduction

It has seemed desirable before describing the installation, to give some account of the initiation and development of the undertaking, as only when the methods of development are brought out will the account be complete and the description thoroughly understood.

In the development of the radial velocity work by the writer at the Dominion Astronomical Observatory. Ottawa, a stage was reached where it was recognized that the field of useful work with so comparatively small an aperture as 15 inches would soon be seriously limited. Even with single prism dispersion, 33 A per millimetre at $H\gamma$, stars fainter than 5-5 photographic magnitude required impracticable exposure times and furthermore it was deemed inadvisable to observe, with such low dispersion, stars with good lines, when much more accurate values could be obtained with greater dispersion. Thus the field was limited to spectroscopic binaries of early type, brighter than 5.5 magnitude and it was evident that, with a telescope of 15-inch aperture, the available stars for observation would soon be exhausted.

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Hence, when the need for larger telescopic aperture made itself felt, it was natural to be on the lookout for opportunity to secure it. Plans for such additional equipment began to take more concrete shape at the Mt. Wilson meeting of the International Union for Co-operation in Solar Research in 1910, which I had the good fortune and honour to attend as representative of the Dominion Astronomical Observatory.

At the meeting a committee on Co-operation in the Determination of Stellar Radial Velocities of which Professor W. W. Campbell, Director of the Lick Observatory, was chairman met and discussed the needs in radial velocity work and the resources available for meeting these needs. It was evident that only the 36-inch telescope at the Lick Observatory and part of the time of the 60-inch at Mt. Wilson could be devoted to this work and further equipment was urgently needed if substantial progress in this important work was to be obtained.

At the same time, the great success of the 60-inch reflector at Mt. Wilson, made it practically certain that a large reflecting telescope could successfully carry on radial velocity observations at least equally as well as a refractor of the same aperture and at one-fourth the initial cost, leaving out of consideration the impossibility of obtaining suitable material for the objective of a very large refractor.

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