that have marked the past quarter century have resulted from the curiosity of scientists whose conscientious labours were directed to nothing more than opening up to exploration new paths into the unknown. The two Canadian Government Observatories were among the earliest national scientific institutions in the Dominion. They established Canada's name in the scientific world and have added greatly to her laurels as the years have passed. Under the following headings, the main avenues of research developed in the Dominion Astrophysical Observatory are summarized. In the space available here, however, it is possible to do no more than touch upon their scope.

**Stellar Motions.**—The first large piece of work undertaken by the Dominion Astrophysical Observatory was the study of the motions of the stars. In the first three and a half years of its existence the Observatory at Victoria measured the speed towards the earth (technically called the radial velocity) of 600 stars as compared with about 2,000 determined previously at all other observatories. Since then, the proportion calculated by the Dominion Astrophysical Observatory has increased owing to the facilities and skills developed for this type of work at Victoria.

A solid reputation was built up by this institution which was evidenced among other ways by the award to the first Director, Dr. Plaskett, of a Fellowship in the Royal Society in 1924. The study of stellar motions is undertaken in order to understand the construction of the sidereal universe and the forces which govern the movements of the stars. Observations of the accurate positions of the stars in the sky have been carried on for over a century and are still being assiduously determined. These observations of position when repeated twenty, fifty or more years later serve to determine the transverse components of the stellar motion, expressed by the small angular displacement across the sky in a year or a century. Because of the great distances of the stars these angles are excessively minute varying from immeasurably small quantities, one or two thousandths of a second of arc for the distant stars to about five seconds of arc for a few of the nearby stars. To-day, these angular speeds (technically called "the proper motions") for about 35,000 stars are known but they have to be supplemented by the radial or line-of-sight components before the actual translational motion of the stars can be determined. Unless the radial components and the distances of the stars, as well as the transverse components, are known, neither the space velocities nor the actual directions in space of the stellar motions can be determined, and our knowledge is too incomplete to give a true picture of the structure of the stellar universe.

**The Rotation of the Galaxy.**—The most stupendous of all celestial masses is the Galaxy—more commonly known as the Milky Way. Its appearance as a dim white band across the heavens marks only the plane of greatest extension—the direction in which the stars appear congested due to distance. The hidden mysteries of the Galaxy are the key to "the riddle of the universe".

Through the studies of stellar motions, explained under the previous heading, scientific thinking has been influenced and knowledge of the dynamics and dimensions of the stellar universe increased.

An extensive survey of the relatively rare and distant high temperature stars was completed by J. S. Plaskett and J. A. Pearce in 1930; approximately six years of observing being required to secure more than 3,000 spectrograms of these stars. A critical analysis of the spatial distribution and motions of 850 stars for which