

K S Krishnan and The Kodaikanal Observatory

Not very far from Kodaikanal, only forty-eight miles to the south-west of the temple town of Madurai, is the prosperous village of Watrap. To the north of the village loom large the Western Ghats, reaching a height of about 4000 ft in these parts. Watrap is situated in the deep bay of these mountains. The rain-fed streams coming down the Ghats provide for the rich vegetation in and around, making Watrap a centre of plentiful agricultural produce. Farming has been and still is the main occupation of the people settled in the area. At the turn of the century, the period to which our story relates, the Brahmins dominated the village owning most of its wetlands and the tanks. Amongst them lived a deeply religious and learned soul, known for his scholarship and profound knowledge of the Classical Tamil and Sanskrit scriptures. A Thengalai Iyengar by caste, he was popularly known as 'Kariamanikkam Vathiyar'. His actual name was Srinivasa Iyengar. He lived a life of great piety in action and purity in thought. On December 4, 1898 he was blessed with a son who took the family and father's names, as per the prevailing custom, and was christened Kariamanikkam Srinivasa Krishnan or K S Krishnan for short.

Krishnan's early years

Krishnan's early schooling was in the rural surroundings of his native village and at the Hindu High School at nearby Srivilliputtur. After matriculation, Krishnan proceeded to study in the American College, Madurai (1914-1916) and then in the Madras Christian College (1916-1918), where he studied in the Science Group ii – Physical Sciences. There he became a favourite of Rev. Alexander Moffat, Professor of Physical Science and a great scholar. Moffat saw in Krishnan a rare

flair for science and he did not want to lose him. So, soon after Krishnan finished his studies in BA, Moffat found an opening for him in the Chemistry Department of MCC and prevailed upon the College authorities to offer him an appointment. In October 1918, K S Krishnan joined Madras Christian College as a temporary Demonstrator in Chemistry.

The Kodaikanal Observatory

Since its inception, the Observatory in Kodaikanal was almost entirely engaged in research on the Sun, for the conditions at Kodaikanal for solar observations were excelled at few, if any, of the observatories in the world. The research programmes included the study of the physical constitution of the Sun, the solar disturbances and the solar atmospheric phenomena in general. It had highly specialised instruments not to be found anywhere else in India. The pride of place belonged to the spectroheliograph, which John Evershed perfected into the finest instrument of its kind in the world. It took regular spectroheliograms in both the Ca II K and H α lines.

Although he enjoyed his work in the Chemistry Laboratory of MCC and especially, the tiffin-hour discussion sessions with the students, Krishnan was in search of a more permanent placement in life and a one more suited to his taste. His inner desire was to take up a career in research. Moffat instinctively knew that MCC was too small a place to offer adequate opportunities to this young and talented student of his. By then the fame of Professor CV Raman's Calcutta School of Physics had spread far and wide and bright and young students, especially from the South, were being attracted to it. Instead of pursuing a graduate programme in Madras,

Krishnan decided to try for a seat in the MSc physics programme of the University of Calcutta where Raman lectured regularly. He sent an application for the next academic session to begin in July 1920. He had not yet fully decided whether to really take the plunge and leave the familiar South to travel far from home to an entirely new environment. Just then Moffat learnt that The Solar Physics Observatory in Kodaikanal was in urgent need of a suitable person to fill in a vacancy in the Second Assistant's post. He urged Krishnan to apply for it and he strongly recommended him to the Director, John Evershed. This was in February 1920.

The position of the Second Assistant had fallen vacant when G Nagaraja Ayyar succumbed to a severe attack of influenza in October 1918. During that year a peculiar form of influenza had made its appearance practically all over the globe and in India alone a record number of five million deaths were reported, directly or indirectly caused by the killer disease. The Kodaikanal Observatory did not escape the ravages of the epidemic for in the death of Mr Nagaraja Ayyar, it lost an excellent worker. In his year-end report the Director wrote:

Mr Nagaraja Ayyar was a good observer and was very skillful in the handling of instruments. He early succeeded in photographing an excellent series of spectra of large sunspots and was the author of a paper on the weakened lines in spot spectra published in *The Astrophysical Journal* in 1907, Vol. XXVI, p.143.

The vacancy created by this premature loss of a scientist was not immediately filled. Evershed's attempts to recruit somebody locally came to nought. In February 1919 he received a letter from Gilbert T Walker, the Director-General of

Observatories (DGO), suggesting that the post be kept vacant. More than a year went by and no action was taken. Meanwhile, the work of the observatory was getting hurt, for in those days only a handful of Scientific Assistants along with the Director and the Assistant Director handled all the work. John Evershed was not happy with the situation and when Walker visited Kodaikanal in the winter of 1919-20, he impressed upon him the urgent need for a qualified man in the Second Assistant's position. Fortunately, Walker agreed and suggested both he and Evershed should try their best to find a suitable person. Thus, Evershed spread the word in the portals of MCC and Walker, on his way to Calcutta from Kodaikanal, did the same in Presidency College.

Krishnan's application was received in Kodaikanal on February 17, 1920 to which Evershed responded immediately. In his letter dated February 20, he wrote:

Dear Sir,

With reference to your application for the post of 2nd assistant at the Kodaikanal Observatory, the terms of appointment are as follows:-

- (1) The pay of the post is Rs 125 - 10 -175 with rent free quarters.
- (2) You will serve on probation for 1 year and if approved will be confirmed in the appointment.

The nature of the work is solar observations including spectroscopic work, spectrum measurements and reductions and the taking of spectra for measurement. You will also assist in the routine work including preparation of bulletins for the press and in any research work that may be undertaken. There is a large amount of measuring work which requires considerable training before the required degree of accuracy is attained.

If you care to accept this appointment let me know how soon you will be prepared to come to Kodaikanal. The appointment is now vacant and there is an unfurnished house ready for occupation.

Yours faithfully,
sd/- J Evershed
Director

Krishnan was thrilled. This seemed to be the opportunity he was waiting for. In his school days he often dreamt that he would become an engineer some day, but later during the undergraduate years, his attention had turned mainly to physics and mathematics. Kodaikanal was closer home and Evershed's reputation as a scientist was enviable. The observatory he headed was known to be one of the best in the world. Krishnan decided he would go to Kodaikanal.

But some unexpected developments took place which upset Krishnan's plans.

In the Madras Meteorological Office, part of the Madras Observatory, and directly under the administrative control of the Director, Kodaikanal and Madras Observatories, there was one Mr P R Chidambara Ayyar who also nurtured a desire to work under the great Evershed in Kodaikanal. When he heard that a rank outsider is being appointed as the Second Assistant there, he was incensed. Here was a chance for him, just if he could obtain a transfer to Kodaikanal but that chance was being lost, as the Director decided to bring in a new man. Chidambara Ayyar did not let the matter rest until he had made a serious attempt. He made a representation to the authorities and requested for a transfer to Kodaikanal. Chidambara Ayyar was many years senior to Krishnan and had worked in the Madras Meteorological Office since 1914. In his plea for a transfer to Kodaikanal, he pointed out that he was already in the service of the observatories and

had several years of experience. Surely the authorities could not afford to not listen, and although Evershed had already issued a letter of appointment to Krishnan, he had to find a clever way of retracting it without causing himself too much embarrassment.

Evershed did not know Krishnan at all and he thought since Krishnan was a fresh entrant, he might not mind a position in Madras, since both the observatories were administratively the same, being part of the India Meteorological Department of the British Government. However, the activities of the two were very different in nature and the Madras Observatory could not be considered a research institution by any stretch of imagination. Evershed spoke to Moffat and requested him to convince Krishnan to take up Chidambara Ayyar's position in Madras, while he committed to Walker he would transfer Ayyar to Kodaikanal. Krishnan was clear in his mind what he wanted to do. He surely did not want to spend his precious hours in a day collecting routine data at the Madras Meteorological Office. For him it was either solar research at Kodaikanal in a proper research environment or pursuit of a higher degree in Calcutta. So, when Moffat conveyed the revised decision of the Director, Kodaikanal to Krishnan urging him to take up the position to be vacated by Chidambara Ayyar in Madras, Krishnan refused. In April 1920, Chidambara Ayyar received his appointment as Second Assistant in the Kodaikanal Observatory and soon after Krishnan heard from Calcutta that he had been offered a seat. He resigned from the Demonstrator's position in MCC and started a very different kind of preparation for starting a new chapter in his life.

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