

Astronomy & Astrophysics Division Seminar

Title : Comet C/2016 R2 (PanSTARRS) : A distinct visitor

Speaker : Mr. Kumar Venkataramani (PRL, Ahmedabad)

Date : 01.05.2018 (Tuesday)

Time : 16:00 Hrs

Venue : Seminar Room # 113/114 (Thaltej Campus)

Abstract: Comets are cold, icy bodies in the Solar system that were formed in the early solar nebula. They are considered to be the signature bodies for investigating the formation of the Solar system. As a comet nucleus makes its journey towards the Sun, the ices start sublimating, giving rise to a mixture of gas and dust that forms the coma. Cometary molecular emissions are well known and have been studied since a long time. A typical optical spectrum of a comet with well developed coma shows molecular emissions dominated by carbon chain molecules like C₂ and C₃. NH₂ and CN are two other species which show prominent emission lines in the optical spectrum. In general, these molecular emissions start appearing sequentially when the comet comes closer than 3 AU to the Sun. The most likely emission to appear first is that of CN molecule at around 3 AU, followed by the rest of the emissions. There are very few instances, when these pristine ice balls show a distinct behavior as compared to the regular oort cloud and jupiter family comets. Such a behaior is a consequence of its distinctive processing at the location of its formation in the early solar nebula. The spectroscopic observations of the comet C/2016 R2 have revealed its unusual behavior in the last few months. The results from the study of this distinct visitor to the inner solar system would be discussed in this talk.
