You are welcome to nominate speakers to colloquium@nao.cas.cn. The video and slide of previous colloquia and more information can be found at http://colloquium.bao.ac.cn/.

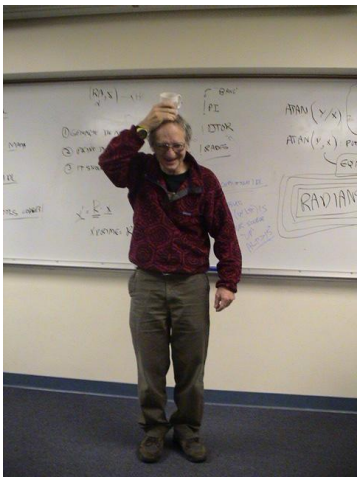
国台学术报告 NAOC COLLOQUIUM

2014 年 第 33 次 / Number33 2014

Time: Monday 2:30PM, July 28 Location: A601 NAOC

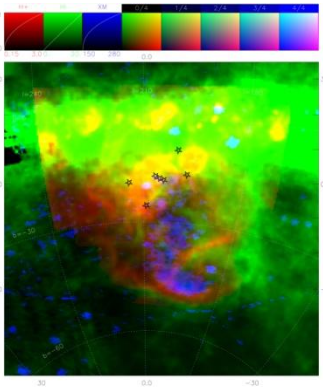
THE DIFFUSE ISM:

MORPHOLOGY, PHASES, MAGNETIC FIELDS



Prof. Carl Heiles (Radio Astronomy Laboratory)

Carl Eugene Heiles (born 1939) is an American astrophysicist noted for his contribution to the understanding of diffuse interstellar matter through observational radio astronomy. He did his undergraduate work at Cornell University, receiving a degree in engineering physics, and then received his doctorate in 1966 from Princeton University in astrophysical sciences. He has worked at the University of California, Berkeley since, and is currently a professor of astronomy. While Heiles was still a graduate student at Princeton, he wrote a paper with Michel Hénon about a third integral of motion in axisymmetric potentials, from which the Hénon-Heiles equation is drawn.[2][3] Though his paper with Hénon has been cited more than all but one of his other papers,[4] most of Heiles' work has been in the field of radio astronomy. Heiles was part of the team which discovered the first millisecond pulsar, PSR B1937+21.[5] Heiles has also been pivotal in understanding the diffuse gas in the interstellar medium, primarily through observation of the hydrogen line. His role in this field is such that a conference at Arecibo Observatory in Puerto Rico on diffuse matter was held in honor of Heiles' 65th birthday.[6] Observations of this gas hashelped develop a better understanding of star formation and galactic gravitational and magnetic fields. He was awarded Heineman Prize in 1989 for outstanding work in astrophysics, Noyce Prize for Excellence in Undergraduate Teaching in 2002. Heiles is a member of the National Academy of Sciences, United States.



Abstract

We describe two recent developments regarding the diffuse interstellar medium. One involves the 'Leo Cloud', a nearby, very cold and very high-pressure sheetlike cloud that resides in the 'Local Bubble'. The Local Bubble was originally discovered from X-ray emission from its hot gas, but it is now thought that it does not, in fact, emit X-rays, nor does it contain hot gas. So what keeps the highly overpressured Leo cloud confined? The other derives from the recent availability of Faraday Rotation measurements with angular resolution about 1 degree. These reveal spectacular magnetic structures in the high-latitude ISM, and also show surprising magneto turbulent behavior in the edge of the Eridanus/Orion superbubble.

All are welcome! Tea, coffee, biscuits will be served at 2:15 P.M.