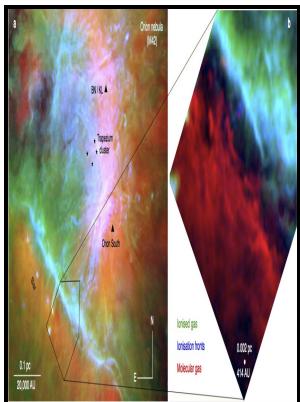


High spectral resolution observations of the molecular hydrogen emission in the Orion molecular cloud

California Institute of Technology - The ground state of molecular hydrogen



Description: -

- High spectral resolution observations of the molecular hydrogen emission in the Orion molecular cloud
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Notes: Thesis (Ph.D.)--California Institute of Technology, 1981.
This edition was published in 1981



Filesize: 6.26 MB

Tags: #Very #High #Excitation #Lines #of #H2 #in #the #Orion #Molecular #Cloud #Outflow

Probing conditions at ionized/molecular gas interfaces with high resolution near

Our results confirm the existence of a third intermediate class of GRBs with mean duration similar to 25–50 s, as deduced from a cluster analysis and from a neural network algorithm. The millimetre and submillimetre rotational transitions of carbon monoxide 12CO and its isotopologues, 13CO and C 18O, are the most widely used tracers of molecular hydrogen H 2 that offer several advantages over other methods such as dust extinction, dust emission and gamma rays. However, to derive the more relevant H 2 column density and mass, knowledge of the 13CO abundance is required.

The ground state of molecular hydrogen

In total, 443 Class III stars from this list have 2MASS counterparts and are excluded from our data analysis. The higher-velocity component exhibits a clear spatial correspondence with the boundary of IC 434, which is a H ii region ionized by σ-Ori, indicating an association between them.

High Spectral and Spatial Resolution Observations of Shocked Molecular Hydrogen at the Galactic Center

The 2MASS Point Source Catalogue is a powerful set of data to construct extinction images of nearby interstellar clouds. The first signatures of interstellar H 2 were found through rocket and satellite observations as UV absorption features due to electronic transitions in the spectra of some bright stars ; ; , and had their origin in thin interstellar clouds in the line of sight to the stars. However, circumstellar disks became clearly detectable before this by using ground-based interferometry.

High Spectral and Spatial Resolution Observations of Shocked Molecular Hydrogen at the Galactic Center

More than half of the detected lines are from H 2. Submaps were observed so that adjacent blocks overlap.

The black box indicates the area observed by Nanten2. Using V band star counts to estimate A v towards 38 interstellar clouds, Dickman found a mean relative abundance of 2. For regions with densities less than the critical density, the 13CO rotational energy levels may be subthermally excited.

High Spectral and Spatial Resolution Observations of Shocked Molecular Hydrogen at the Galactic Center

We find a good agreement between the predictions of the temperature fluctuation paradigm t2 and the abundance discrepancy factor ADF in the main emission of the Orion Nebula. The contour levels are indicated at the bottom of the figure. However, this self-shielded zone comprises a fraction of the total molecular mass of the cloud — 60 per cent in Orion A and 47 per cent in Orion B.

Observations of interstellar H₂: Milestones

Mid- and far infrared studies also measure the amount of optical and ultraviolet light that is absorbed by dust in the galaxy by observing the reradiated light described in section II. For both Dickman and Frerking et al.

Related Books

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