

profiles as wide bumps and depressions. In the nuclear region ($r < 3'$) of M31, the west side is brighter while in the outer region the east side is brighter. In the central part of both M31 and M81, the B-V color is almost constant. But U-B in M31 and B-V in M81 show increasing blueness with distance from the center. In NGC 2403 there appears an asymmetry between east and west sides and an excess in B is observed at the ring-like region. No systematic variation of color in the visible range is detected in NGC 2403. From photographic photometry of NGC 2403, the dark lanes and spiral arms are identified and compared with the photoelectric results. The photometric results are compared with radio data.

Structure of a late type spiral galaxy NGC 7793

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Using the empirical model, we tried to calculate the composition of NGC 7793. The calculated mean abundance is $[O/H] = -0.39$, $[N/O] = -0.71$ and $[S/O] = 0.36$. However, we could not find any radial abundance gradient for this galaxy. This uniform abundance seems the general character of the late type spiral galaxy.

H-R Diagram for Nearby High-Velocity Stars*

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Two hundred nearby high-velocity stars were selected on the basis of tangential velocity larger than 100 km/sec. Color-color diagram and color-magnitude diagram as well as M_{bol} versus $\log T_{eff}$ diagram for these high velocity stars have been obtained. H-R diagram for nearby high velocity group is found to be of a group of stars, at least, about $(5 \sim 10) \times 10^9$ year old and resembles an old open cluster.

Evolution of the Solar Neighborhood I**

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As a part of the study on the evolution of our Galaxy, physical and kinematic properties of parallaxic stars were investigated in the aspect of the Galactic evolution. Some results about the evolutionary characteristics of the parallaxic stars are presented.

The Presence of C₂ Lines in Sunspots

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High spatial and spectral resolution observations have been made over a sunspot (SPO 6403) with the Echelle Spectrograph at the Vacuum Tower Telescope, Sacramento Peak Observatory, searching for C₂ lines in sunspots.

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