COMPLETE TO A LEVEL OF ~100 mJy. AT THIS SENSITIVITY, 500 K AND 1500 K OBJECTS THE SIZE OF JUPITER COULD BE DETECTED OUT TO DISTANCES OF 1.1 AND 3.1 PC, RESPECTIVELY. FOR COMPARISON, AN ISOLATED COUNTERPART TO THE BROWN DWARF V880 CEPHEI COULD BE DETECTED OUT TO 2.9 PC.


BASED ON THE PRELIMINARY RESULTS OF THIS SURVEY, WE DISCUSS THE NATURE OF THE BROWN DWARF CANDIDATES, LIMITS ON THE LOCAL DENSITY OF SUB-STELLAR OBJECTS, AND THE SUBSEQUENT CONSTRAINTS ON THE MASS OF DARK MATTER IN THE GALAXY.

33.02 HYDROGEN LYMAN ALPHA FLUXES FOR LATE-TYPE DWARF STARS

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THE HYDROGEN LYMAN ALPHA EMISSION LINE IS ONE OF THE MOST IMPORTANT COOLING MECHANISMS FOR THE OUTER ATMOSPHERES OF LATE-TYPE STARS. IN COOL DWARFS ITS STRENGTH EXCEEDS THE SUM OF THE OTHER TRANSITION REGIONS. YET, DESPITE ITS IMPORTANCE, MOST PROGRAMS USING THE INTERNATIONAL UV VARIETY EXPLORER (IUE) TO STUDY LATE-TYPE STARS HAVE NEGLIGENTLY THIS IMPORTANT DIAGNOSTIC. TWO OBSERVATIONAL COMPLICATIONS HAVE PREVENTED THE DETECTION OF ACCURATE HYDROGEN ALPHA SURFACE FLUXES. FIRST, THE EARTH'S HYDROGEN CORONA RESONANTLY SCATTERS SOLAR LYMAN ALPHA PHOTONS, PRODUCING APPARENT "GEOCORONAL" EMISSION THAT FILLS THE LARGE APERTURE OF THE IUE. SECOND, INTERSTELLAR HYDROGEN ABSORBS A LARGE FRACTION OF THE STELLAR LYMAN ALPHA EMISSION, EVEN FOR THE NEAREST STARS.

WE HAVE USED TECHNIQUES THAT ALLOW US TO COMPENSATE FOR BOTH OF THESE DIFFICULTIES AND HAVE APPLIED THESE TECHNIQUES TO A LARGE NUMBER OF UV VARIETY SPECTRA OF NEARBY LATE-TYPE DWARFS (SPECTRAL TYPES G TO M). WE PRESENT CORRELATIONS OF LYMAN ALPHA SURFACE FLUX WITH THE FLUXES OF VARIOUS CHROMOSPHERIC, TRANSITION REGION, AND CORONAL (X-RAY) DIAGNOSTICS AND DISCUSS THE BEHAVIOR OF LYMAN ALPHA EMISSION IN THESE STARS.

THIS WORK IS SUPPORTED BY NASA GRANT NAG6-82 TO THE UNIVERSITY OF COLORADO.

33.03 X-RAY SELECTED M DWARFS AND THE DIFFUSE X-RAY BACKGROUND

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THIS WORK WAS SUPPORTED UNDER CONTRACT NAG6-497, GRANTS AP09082-0014 AND NAG6-100, AND THE ALFRED P. SLOAN FOUNDATION.

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33.04 SOLAR-LIKE ACTIVITY IN WARM STARS


WE REPORT RESULTS FROM A DETAILED STUDY OF THE TRANSITION REGION EMISSION IN 89 EARLY F DWARFS. USING IUE SPECTRA, WE HAVE MEASURED THE C II AND C IV FLUXES. WE FIND THAT EARLY F DWARFS (JL > B-Y [0.52]) ARE EXTREMELY ACTIVE IN SOLAR TERMS, WITH C IV SURFACE FLUXES ~ 4 X 10^5 ERG CM^-2 S^-1.

THERE IS No EVIDENCE FOR A DECREASE IN ACTIVITY LEVELS AMONG THE HOTTER STARS - IN FACT THE SURFACE FLUXES INCREASE AS ONE GOES TO HOTTER STARS. THERE IS EVIDENCE FOR CORRELATION OF SURFACE FLUXES WITH ROTATION ONLY FOR B-Y > 0.42.

WE SHALL CONSIDER THE IMPLICATIONS OF THESE RESULTS ON OUR NOTIONS OF CONVECTIVE ZONES AND DYNAMOS. WE SHALL DISCUSS THE POTENTIAL FOR DETECTING TRANSITION REGIONS (SHOULD THEY EXIST) IN LATE A DWARFS.

33.05 AN EXTENSIVE SURVEY OF PHOTOSPHERIC MAGNETIC FIELDS IN G AND K DWARFS

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WE PRESENT SOME PRELIMINARY RESULTS OF A SURVEY OF PHOTOSPHERIC MAGNETIC FIELDS ON OVER 50 LATE-TYPE DWARFS, MORE THAN 30 OF WHICH HAVE NEVER BEFORE BEEN STUDIED. INCLUDED IN THIS STUDY IS THE FIRST DETECTION OF A MAGNETIC FIELD ON AN M DWARF STAR. HIGH RESOLUTION, HIGH SIGNAL-TO-NOISE SPECTRA FROM A VARIETY OF SOURCES (THE NSO MCMAHON ECHelle + BARE RETICON; THE MMT CASSEGRAIN ECHelle + INTENSIFIED RETICON; THE KPNO 4m FT5) ARE ANALYZED FOR MAGNETIC FIELDS USING A VARIETY OF NEW LINE MODELING TECHNIQUES (SAAR, LINSKY, AND SECKERS 1985) WHICH INCLUDE RADIATIVE TRANSFER EFFECTS, FULL ZEEMAN PATTERNS, AND CORRECTIONS FOR LINE BLENDING. THE ANALYSIS DERIVES THE MEAN MAGNETIC FIELD IN STELLAR ACTIVE REGIONS (B) AND A MODEL-DEPENDENT FRACUTIONAL SURFACE AREA COVERAGE OF THESE REGIONS (f), OR UPPER LIMITS FOR BOTH B AND F. CORRELATIONS OF THESE RESULTS WITH VARIOUS STELLAR PARAMETERS (E.G. ROTATION, TEMPERATURE, R(H-K), L) ARE PRESENTED, AND SOME POSSIBLE IMPLICATIONS FOR THE GENERATION MECHANISM OF MAGNETIC FLOW IN LATE-TYPE DWARFS ARE DISCUSSED.

THIS WORK IS SUPPORTED BY NASA Grant NGL 06-003-057 TO THE UNIVERSITY OF COLORADO.

33.06 THE BRIGHT, NEWLY DISCOVERED BY DRACONIS SYSTEM HD80715

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WE PRESENT FINDINGS ON THE BRIGHT (V=7.7), DOUBLE-LINED SPECTROSCOPIC binary HD80715 (SAND 42826). THIS K3V STAR WAS FIRST REPORTED AS A SPECTROSCOPIC binary BY ADAMS (1913) ON THE BASIS OF 3 SPECTRA WHICH SHOWED A VELOCITY DISPERSION OF 85 KMS. PHOTOGRAPHY ON THE GENEVA SYSTEM BY BUSONI (1981) SHOWED MICRO-VARIABILITY SUGGESTIVE OF A CHROMOSPHERICALLY ACTIVE binary. THIS PHOTOGRAPHY AND