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(NASA-TM-84001) FAR INFRARED SUPPLEMENT:  
CATALOG OF INFRARED OBSERVATIONS (NASA)  
100 P C A05/MF A01 CSCL 03A

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# Technical Memorandum 84001

## Far Infrared Supplement: Catalog of Infrared Observations

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OCTOBER 1982

National Aeronautics and  
Space Administration  
**Goddard Space Flight Center**  
Greenbelt, Maryland 20771



FAR INFRARED SUPPLEMENT:  
CATALOG OF INFRARED OBSERVATIONS

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Preview Edition

October 1982

NASA TM 84001

## SPECIAL INSTRUCTIONS: FAR INFRARED SUPPLEMENT

This preview edition of the Far Infrared Supplement contains a subset of the data summarized in the Catalog of Infrared Observations (TM 83819). Please note the following characteristics and limitations of the Supplement:

- 1) The supplement lists all observations at wavelengths greater than or equal to 5 microns, thus eliminating the majority of visible stars from the catalog listings. This allows the far infrared researcher to more easily locate objects of particular interest.
- 2) Objects listed in the supplement may also have been observed at wavelengths less than 5 microns. Consult the full Catalog of Infrared Observations for additional near infrared observations.
- 3) The preview edition does not contain the alphabetical source index (Atlas of Infrared Source Names and Positions) or index to bibliographic reference numbers (Bibliography of Infrared Astronomical Literature). Please refer to the Catalog of Infrared Observations for this information.

Bear in mind the limitations of the full Catalog of Infrared Observations:

- 4) Sky coverage is not uniform, since the catalog contains a mixture of sky surveys, region surveys, and thousands of individual source observations.
- 5) Observational results are presented in their original published form. No attempt has been made to create a single system of infrared photometric units, or to eliminate redundant observations. This kind of interpretation is more appropriately the responsibility of the individual researcher.
- 6) The literature search is incomplete for certain years of several journals.
- 7) The catalog is only as accurate as the published results from which it was constructed.

The user of this supplement must therefore approach it with the same kind of professional skepticism which would be applied to the original journal articles. One of the purposes of this first edition is to identify discrepancies in the data base, and any errors or omissions noted should immediately be communicated to the editors.

Inquiries and comments regarding the contents of the supplement, and requests for copies of the catalog and data base in printed, microfiche, or magnetic tape form should be directed to:

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## HOW TO USE THIS CATALOG

- 1) Find the right ascension and declination of interest in the catalog listings...

The printed pages read down in continuous columns across the binding of the book, listed in order of increasing right ascension (not source name).

- 2) If you don't know the position of a source, look it up by name in the Atlas at the back of this volume...

The Atlas gives published infrared positions, or the nominal non-infrared catalog positions when articles do not specify positions; usually the best available, but not necessarily the true infrared position in every case.

- 3) Check nearby positions... the same source is often listed at different positions in the catalog since observers report different positions, or because positions are specified with differing precision.
- 4) Check other source names... sources are often listed under several different names in the catalog.
- 5) For each unique position in the catalog the wavelength, flux and beam size are listed in order of increasing wavelength (not source name), followed by the bibliographic reference number, and position reference number (if the position was not given by the original authors). The data are listed as published in the original article. Abbreviations for infrared photometric units are listed in Table 6.
- 6) Always refer to the original article when interpreting data from the catalog listings. Use the bibliographic reference number for each observation to find the original journal article in the Bibliography at the back of this volume.

The Bibliography is also listed alphabetically by first author to aid the user in locating familiar articles in the journals.

## I. INTRODUCTION

The development of a new generation of orbital, airborne and ground-based infrared astronomical observatory facilities, including the Infrared Astronomical Satellite (IRAS), the Cosmic Background Explorer (COBE), the NASA Kuiper Airborne Observatory, and the NASA Infrared Telescope Facility, has intensified the need for a comprehensive, machine-readable data base and catalog of current infrared astronomical observations. The Infrared Astronomical Data Base and its principal data product, this catalog, comprise a machine-readable library of infrared ( $1 \mu\text{m} - 1000 \mu\text{m}$ ) astronomical observations published in the scientific literature since 1965.

### DATA BASE AND INFRARED CATALOG

The Infrared Astronomical Data Base is maintained at NASA/Goddard Space Flight Center. It contains most infrared observational data for astronomical sources outside the solar system, constructed through a search of selected scientific journals and published infrared survey catalogs (see Table 1). Relevant articles are screened manually, and cross-checked with the NASA/GSFC library RECON computer search system and the Astronomy and Astrophysics Abstracts under applicable keywords.

The current extent of the literature search is summarized in Table 2. Several of the most active journals have been completely searched for the years 1966 through 1980. Completion of the literature search (for all of the present journals from 1980 to 1965) should increase the total number of observations in the present data base by only about 5%. To date, over 1,250 journal articles and 10 major survey catalogs have been included in this data base, which contains over 56,000 individual observations of about 10,000 different infrared sources. Of these, some 8,000 sources are identifiable with visible objects, and about 2,000 do not have known visible counterparts.

The data base is processed with the Goddard IBM S-3081 and S-360/91 computers. A magnetic tape library contains all of the observational data, bibliographic reference information, object name aliases, and stellar catalogs (for supplementary position determinations). A library of FORTRAN language programs used to access and process the data and a file of journal article photocopies are maintained as part of the data base.

This Catalog of Infrared Observations (CIO) was produced from information available in the data base. Two appendices have been included in this volume: an Atlas of Infrared Source Names and Positions, which cross-indexes infrared source positions with an alphabetical listing of source names, and a complete Bibliography of Infrared Astronomical Literature to document each observational listing and to facilitate subsequent research efforts.

TABLE 1: LITERATURE INCLUDED IN THE DATA BASE

The Catalog of Infrared Observations contains observational data obtained from a search of the following infrared catalogs and scientific journals:

Caltech Two-micron Sky Survey (690001)  
Air Force Geophysical Laboratory Four-Color Infrared Sky Survey (760913)  
AFGL Four-Color Infrared Sky Survey Supplemental Catalog (770706)  
Equatorial Infrared Catalog (780604)  
Catalog of 10 $\mu$ m Celestial Objects (740903)

Astronomical Journal (A. J.)  
Astronomy and Astrophysics (Astr. & Ap.)  
Astronomy and Astrophysics Supplement (Astr. & Ap. Suppl.)  
Astrophysical Journal (Ap. J.)  
Astrophysical Journal Letters (Ap. J. Letters)  
Astrophysical Journal Supplement Series (Ap. J. Suppl.)  
Astrophysical Letters (Ap. Letters)  
Astrophysics and Space Sciences (Ap. and Sp. Sci.)  
Astrofizika  
Communications of the Lunar and Planetary Laboratory (Comm. L.P.L.)  
Earth and Extraterrestrial Sciences (Earth and Ext. Sci.)  
I. A. U. Circulars (I.A.U. Circ.)  
Memoirs of the Royal Astronomical Society (Mem. R. A. S.)  
Monthly Notices of the Astronomical Society of South Africa (M.N.A.S.S.A.)  
Monthly Notices of the Royal Astronomical Society (M.N.R.A.S.)  
Nature  
Nature Physical Sciences  
Observatory  
Proceedings of the Astronomical Society of Australia (Proc. A.S.A.)  
Publications of the Astronomical Society of Japan (P.A.S.J.)  
Publications of the Astronomical Society of the Pacific (P.A.S.P.)  
Science  
Soviet Astronomy (Sov. Ast.)  
Soviet Astronomy Letters (Sov. Ast. Letters)  
Tokyo Astronomical Bulletin (Tokyo Ast. Bul.)  
Zeitschrift fur Astrophysik (Zeit. fur Ap.)



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TABLE 2: PRESENT EXTENT OF THE LITERATURE SEARCH (MOST ACTIVE JOURNALS)

The data base includes the complete contents of the following catalogs:

- Caltech Two-micron Sky Survey (690001)
- Air Force Geophysical Laboratory Four-Color Infrared Sky Survey (760913)
- AFGL Four-Color Infrared Sky Survey Supplemental Catalog (770706)
- Equatorial Infrared Catalog (780604)
- Catalog of 10 $\mu$ m Celestial Objects (740903)

The following journals have been completely searched for the years indicated:

	YEAR: '80	'75	'70	'65	INFRARED ARTICLES/ JOURNAL
Ap. J.	*****	*****	*****	*****	439
Ap. J. (Letters)	*****	*****	*****	- -	314
A. J.	*****	*****	*****	*****	99
M. N. R. A. S.	*****	*****	*****	*****	117
P. A. S. A.	*****	*****	*****	- -	3
Sov. Ast.	*****	*****	*****	*****	19
Sov. Ast. Letters	*****	*****	- - - - -	- - - - -	7
Ap. Letters	*****	*****	*****	*****	6
P. A. S. P.	*****	*****	*****	*****	40
Astr. & Ap.	*****	*****	*****	*****	57
I. A. U. Circ.	*****	*****	*****	*****	20
Nature	*****	*****	*****	*****	17
Ap. J. Supplement	*****	*****	*****	*****	5
	'80	'75	'70	'65	

The literature search is complete for the years covered by the bar graph; blank years have not yet been completely searched, and a dash (-) indicates that the journal was not published that year. Completion of the literature search for all journals listed above between 1965 and 1980 will increase the total number of observations in the present data base by about 5%.

## II. FORMAT AND CONTENTS OF THE CATALOG OF INFRARED OBSERVATIONS

### SOURCE NAME - "NAME"

Frequently a source is listed by several different names in the catalog, since the observations are entered as given by the original authors. In general, source names are of secondary importance when searching the catalog listings, and positions should be given first priority. All source names and positions are cross-referenced in the Atlas of Infrared Source Names and Positions. The names may be abbreviated (see Tables 3 and 4), and in some cases the names had to be augmented by the editors (for example, when the author assigns the source a number but no identifying prefix).

### POSITION - "RA (1950) DEC"

An alarming number of observations are published without specifying the source position. This is true primarily for visible sources with well documented positions. In such cases, a "nominal" source position is entered in the POSITION field by the editors, and the POS REF column shows the reference from which the position was obtained. These supplementary positions were introduced into the data base because authors who omit specific positions from their articles must presume that the position of the source is common knowledge, and that the nominal position is to be found in the appropriate standard catalog.

A dash (-) indicates that no precise position is available, such as for globular cluster stars where only the central position of the cluster has been published. A totally blank POSITION field indicates that no position is available to the editors. All such entries have been sorted alphabetically by source name and are included at the end of the catalog. The quality of the positional data in the catalog reflects the nature of the original data published in the scientific literature.

### WAVELENGTH - "WAVE"

All wavelengths are given in units of microns. Catalog entries at the same celestial position are listed in order of increasing wavelength. Thus, a rough spectral distribution is listed for each well-observed source position. The WAVE column data can also be used as a visual indication of when the catalog data switches to a new source, since the wavelength will "reset" to a lower value.

### INFRARED FLUX - "FLUX"

The observed infrared flux is presented in units published by the original authors. The units have been given arbitrary one-letter abbreviations (see Table 6). To protect the integrity of the original data, no attempt has been made to convert the many different units of infrared flux into a more homogeneous system.

About 95% of the flux observations in the catalog have units of "magnitudes" or "Janskys", or are comments such as "upper limit", "spectrum", etc. An additional 4% of the entries are in a set of commonly used units. The remaining 1% of the entries are in less popular units which are dimensionally equivalent to one of the more commonly used sets (after normalization with an appropriate constant).

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<u>COMMONLY USED UNITS</u>	<u>EQUIVALENT UNITS</u>
M = magnitude	= A, C
$J = 10^{-26} \text{ W m}^{-2} \text{ Hz}^{-1}$ = Jansky	= H, K, L, Q, T
$X = 10^{-18} \text{ W cm}^{-2}$	= G, W
$F = 10^{-16} \text{ W cm}^{-2} \mu\text{m}^{-1}$	= N, R
$I = 10^{-9} \text{ W cm}^{-2} \mu\text{m}^{-1} \text{ Sr}^{-1}$	= Z
$B = 10^{-19} \text{ W m}^{-2} \text{ Hz}^{-1} \text{ Sr}^{-1}$	
$E = \text{ergs sec}^{-1} \text{ cm}^{-2} \text{ Sr}^{-1}$	

Magnitude units are relative and the original article should be checked for the appropriate conversion factor.

The following symbols sometimes occur next to the flux unit column: V = variable, U = upper limit, L = lower limit (detector saturated), and E = flux determined by editors from maps, spectra, or other material in the article not presented in tabulated form. When spectral data (S) is listed, only the starting wavelength of the spectrum is given.

BEAM SIZE - "BEAM"

The angular beam size of the observation is presented in degrees (D), arc minutes (M) and arc seconds (S). If no beam size information was given in the original reference a dash (-) is entered. In addition to being a factor in source brightness calculation, the beam size can be used as an aid in determining positional coincidences and identifications with other sources, and as a first-order indication of positional uncertainty.

BIBLIOGRAPHIC REFERENCE - "BIBLIO"

The bibliographic reference number indicates the original journal reference for each observation in the catalog, and is keyed to the Bibliography of Infrared Astronomical Literature at the back of this volume. Thus each observation can be quickly traced to its original source. The number is made up of the year and month of publication, and a sequential number assigned to the article (for example: "790104" = 1979 January #4).

References used in the data base, but not containing infrared information, have an "89" or "99" as the month of publication. References which do not indicate the month of publication have "00" in the month field.

## POSITION REFERENCE - "POS REF"

If the position of the source was not given by the authors, which is true in a large number of cases (primarily well known visible sources), a supplementary position was obtained by the editors from visible star catalogs, or from references listed in the Bibliography. If the source position had to be determined by the editors from source maps or other non-tabular material in the article, the term "ED" (meaning "editors") is listed as the position reference. The six-digit bibliographic reference number is given when the position was obtained from another publication contained in the Infrared Astronomical Data Base. This column is left blank when the position of the observation was published in the original reference. Supplementary positional references frequently shown in the POS REF column of the catalog include:

AFGL = Air Force Geophysics Laboratory Four-Color Sky Survey  
(760913, 770706)  
AS = Mount Wilson Additional Stars (509901)  
CSI = Catalogue of Stellar Identifications - 1976 (719902)  
3CR = Third Cambridge Revised Catalog  
ED = Editors  
GCVS = General Catalogue of Variable Stars (699901)  
IC = Index Catalogue (958901)  
IRC = Caltech Two-micron Sky Survey (690001)  
MCG = Morphological Catalog of Galaxies  
MWC = Mount Wilson Catalog (339901, 439901, 499901)  
P-K = Catalogue of Galactic Planetary Nebulae (679901)  
RA42 = Master List of Radio Sources (769905)  
RNGC = Revised New General Catalogue (739906)  
YALE = Yale Trigonometric Parallax Catalog (639902)  
UGC = Uppsala Galaxy Catalog (739908)

## OTHER COMMENTS:

Source diameters, or detector and telescope information are not included in the present version of the CIO. This information must be obtained from the original references using the bibliographic reference number from the Catalog of Infrared Observations and the corresponding listing in the Bibliography of Infrared Astronomical Literature.

Source names are frequently composed of a catalog name abbreviation and some identifying number. A list of such abbreviations used in the CIO, and their meanings, is given in Table 5.

## ATLAS OF INFRARED SOURCE NAMES AND POSITIONS

The Atlas of Infrared Source Names and Positions, located at the rear of this catalog, is an index of infrared source positions listed alphabetically by source name. Thus, the celestial position can be found, and a source can be quickly located in the Catalog. Published infrared positions appear in the Atlas, or the nominal non-infrared catalog position when articles do not specify positions; usually the best available but not necessarily the true infrared positions in every case. The reference is indicated in these cases.

## BIBLIOGRAPHY

The Bibliography of Infrared Astronomical Literature identifies entries in the Catalog of Infrared Observations with the original articles published in the astronomical literature. Over 1,250 infrared journal articles and other references are listed in this appendix. The Bibliography is arranged chronologically by reference number (which contains the year and month of publication), and contains the authors' names, journal name or document number, volume, page, and full title of the reference. A version of the Bibliography sorted alphabetically by first author follows the chronological Bibliography listings.

## ACKNOWLEDGEMENTS

The editors are grateful to Dr. Michael Hauser, Dr. Michael Mumma and Dr. Nancy Boggess for their continuing support of the infrared catalog and data base program. Dr. Paul Baker and Eileen Munday contributed to the development of the catalog project. We would like to thank Dr. Wayne Warren, Jr. (National Space Science Data Center) and Dr. Theresa Nagy for help in obtaining positional data to supplement the literature search, and for useful discussions regarding data base management procedures. This work is supported by the National Aeronautics and Space Administration, NASA/Goddard Space Flight Center, and NASA contract NAS 5-24350.

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TABLE 3: CONSTELLATION NAME ABBREVIATIONS

AND	Andromeda	LEO	Leo
ANT	Antlia	LMI	Leo Minor
APS	Apus	LEP	Lepus
AQR	Aquarius	LIB	Libra
AQL	Aquila	LUP	Lupus
ARA	Ara	LYN	Lynx
ARI	Aries	LYR	Lyra
AUR	Auriga	MEN	Mensa
BOO	Bootes	MIC	Microscopium
CAE	Caelum	MON	Monoceros
CAM	Camelopardalis	MUS	Musca
CNC	Cancer	NOR	Norma
CVN	Canes Venatici	OCT	Octans
CMA	Canis Major	OPH	Ophiuchus
CMI	Canis Minor	ORI	Orion
CAP	Capricornus	PAV	Pavo
CAR	Carina	PEG	Pegasus
CAS	Cassiopeia	PER	Perseus
CEN	Centaurus	PHE	Phoenix
CEP	Cepheus	PIC	Pictor
CET	Cetus	PSC	Pisces
CHA	Chamaeleon	PSA	Piscis Austrinus
CIR	Circinus	PUP	Puppis
COL	Columba	PYX	Pyxis
COM	Coma Berenices	RET	Reticulum
CRA	Corona Austrina	SGE	Sagitta
CRB	Corona Borealis	SGR	Sagittarius
CRV	Corvus	SCO	Scorpius
CRT	Crater	SCL	Sculptor
CRU	Cruce	SCT	Scutum
CYG	Cygnus	SER	Serpens
DEL	Delphinus	SRT	Serpens Caput
DOR	Dorado	SRD	Serpens Cauda
DRA	Draco	SEX	Sextans
EQU	Equuleus	TAU	Taurus
ERI	Eridanus	TEL	Telescopium
FOR	Fornax	TRI	Triangulum
GEM	Gemini	TRA	Triangulum Australe
GRU	Grus	TUC	Tucana
HER	Hercules	UMA	Ursa Major
HOR	Horologium	UMI	Ursa Minor
HYA	Hydra	VEL	Vela
HYI	Hydrus	VIR	Virgo
IND	Indus	VOL	Volans
LAC	Lacerta	VUL	Vulpecula

TABLE 4: GREEK LETTER ABBREVIATIONS

(Usually found preceding constellation names in catalog listings)

Catalog Abbreviation	Greek Letter	Name
ALF	$\alpha$	Alpha
BET	$\beta$	Beta
CHI	$\chi$	Chi
DEL	$\delta$	Delta
EPS	$\epsilon$	Epsilon
ETA	$\eta$	Eta
GAM	$\gamma$	Gamma
IOT	$\iota$	Iota
KAP	$\kappa$	Kappa
LAM	$\lambda$	Lambda
MUU	$\mu$	Mu
NUU	$\nu$	Nu
OME	$\omega$	Omega
OMI	$\omicron$	Omicron
PHI	$\phi$	Phi
PI	$\pi$	Pi
PSI	$\psi$	Psi
RHO	$\rho$	Rho
SIG	$\sigma$	Sigma
TAU	$\tau$	Tau
THE	$\theta$	Theta
UPS	$\upsilon$	Upsilon
XI	$\xi$	Xi
ZET	$\zeta$	Zeta

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TABLE 5: INFRARED SOURCE NAME ABBREVIATIONS IN THE CATALOG AND ATLAS

A	Abell (669902)
AFCRL	Air Force Cambridge Research Laboratory Infrared Sky Survey
AFGL	Air Force Geophysics Laboratory Four-Color Sky Survey (760913)
AFGL-S	" " Supplement (770706)
AO	Arecibo Observatory
AP	Apriamasvili
AS	Mount Wilson Additional Stars (509901)
B	Barnard, Braccesi
BD	Bonn Durchmusterung (598901)
BN	Becklin-Neugebauer
BL	Blanco
BS	Yale Bright Star Catalog (649901)
BW	Bar West
B2	Bologna
3C	Third Cambridge Catalog of Radio Sources
4C	Fourth " " " "
CD	Cordoba Durchmusterung (928901)
CED	Cederblad
CIT	California Institute of Technology (661001)
CN	Cannon
CNMY	Cannon and Mayall
CP	Cape Photographic Durchmusterung (968901)
CRL	Cambridge Research Laboratory (= AFCRL)
C'TA	Caltech A
DK	Demers and Kunkel
DKH	Demers Kunkel and Hardy
DO-AR	Dolidze-Arakelyan (599902)
DR	Downes and Reinhart
EIC	Equatorial Infrared Catalog (780604)
EL	Elias
ESO	European Southern Observatory
F	Fairall
FG	Flemming
FJM	Furness Jennings and Moorwood (751202)
G	galactic coordinates, Giclas
GALCEN	Galactic Center
GMB	
GP	Graham and Phillips
GRW	Greenwich Astrographic Catalog
GS	Grasdalen Strom and Strom
H	
H1	Haro (article #1)
H2	Haro (article #2)
H-C	Haro-Chavira
HB	Hubble
HBV	Hamburg-Bergedorf Variable
HD	Henry Draper Catalog (189901)
HDE	" " " Extension (189901)
HE	Henize
HEN	"



HFE Hoffmann Frederick and Emery (711201)  
H-H Herbig-Haro  
HH " "  
HI  
HO Holmberg  
HTR Hyland Thomas and Robinson  
HU Humason  
HV Harvard Variable Star  
HZ Hertzsprung  
IC Index Catalog  
IR infrared  
IRC Caltech Two-micron Infrared Sky Survey (690001)  
IRc infrared cluster  
IRS infrared source  
ISS Infrared Southern Survey (680802)  
J Jonckheere  
K Kohoutek, Kron  
KE Kesteven  
KL Kleinmann-Low  
KKH  
KS Knox-Shaw  
L Lynds, Luyten  
L1 Lindsay  
LFT Luyten's Five Tenth's Catalog  
LHA Lick H $\alpha$   
LKHA " "  
LII Galactic Plane  
LMC Large Magellanic Cloud  
LP Luyten Palomar-Schmidt  
LS Lindsey Smith  
LTT Luyten's Two Tenth's Catalog  
M Messier  
M1- Minkowski  
MACC MacConnell  
MARK Markarian  
MC Martin Cohen  
MCG Morphological Catalog of Galaxies  
ME Merrill  
MR Morton Roberts  
MSH Mills Slee and Hill  
MVP M. V. Penston (730705)  
MWC Mt. Wilson Catalogs (339901, 439901, 499901)  
MXB Massachusetts X-ray Burst  
MY Mayall  
MYCN Mayall and Cannon  
MZ Menzel  
N Nebula  
NA Nassau  
NAB N. A. Bahcall  
NGC New General Catalog  
NP  
OH hydroxyl, Ohio State Catalog  
OI Ohio State Catalog  
OJ " " "

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OMC Orion Molecular Cloud  
ON Ohio State Catalog  
OO Oosterhoff  
OP Ohio State Catalog  
OQ " " "  
P Parenago  
PAL Palomar  
PB Peimbert and Batiz  
PC Peimbert and Costero  
PE Perek  
PG  
PKS Parkes Radio Source Catalog  
PHL Palomar Haro-Luyten  
Q Quasar  
R Ross  
RB Rood and Baum (679901)  
RCW Rodgers Campbell and Whiteoak (609902)  
RGO Royal Greenwich Observatory  
ROA Royal Observatory Annals (709903)  
S Sharpless (599901)  
SAN Sanduleak  
SH2 Sharpless (article #2)  
SN supernova, Shane  
SS Stevenson and Sanduleak  
SWST Swings and Struve  
TH3 The (article #3)  
TON Tonanzintla  
IT Tonanzintla & Tacubaya  
TR Trumpler  
U Uppgren  
UCL University College London  
UGC Uppsala Galaxy Catalog (739908)  
UKS United Kingdom Schmidt  
VBH Van Den Bergh and Herbst (759902)  
VD Vandervort  
VE Velghe  
VS Vrba and Strom  
VSB Vasilevskis Sanders and Balz  
VV Voronco and Veljaminov  
VY Vyssotsky  
W Westerhout  
WU Washington University  
YALE Yale Trigonometric Parallax Catalog (639902)

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TABLE 6: RELATIVE USAGE AND ABBREVIATIONS FOR PUBLISHED FLUX UNITS

13*	A = normalized magnitude
5	B = $10^{-19} \text{ W m}^{-2} \text{ Hz}^{-1} \text{ Sr}^{-1}$
87	C = magnitude, derived from color
8	D = diameter measurement
6	E = $\text{erg sec}^{-1} \text{ cm}^{-2} \text{ Sr}^{-1}$
41	F = $10^{-16} \text{ W cm}^{-2} \mu\text{m}^{-1}$
18	G = $10^{-14} \text{ ergs sec}^{-1} \text{ cm}^{-2}$
3	H = $\log(\text{ergs sec}^{-1} \text{ cm}^{-2} \text{ Hz}^{-1})$
7	I = $10^{-9} \text{ W cm}^{-2} \mu\text{m}^{-1} \text{ Sr}^{-1}$
198	J = $10^{-26} \text{ W m}^{-2} \text{ Hz}^{-1} = 1 \text{ Jansky}$
3	K = $\log(10^{-26} \text{ W m}^{-2} \text{ Hz}^{-1})$
7	L = $\log(\text{W m}^{-2} \text{ Hz}^{-1})$
451	M = magnitude
4	N = $\log(\text{ergs sec}^{-1} \text{ cm}^{-2} \mu^{-1})$
54	P = polarization data
1	Q = $\log(10^{-3} \text{ Jansky})$
5	R = $\log(\text{W cm}^{-2} \mu\text{m}^{-1})$
371	S = spectral data
3	T = $-2.5 \log(\text{ergs sec}^{-1} \text{ cm}^{-2} \text{ Hz}^{-1}) - 48.60$
116	U = upper limit
6	V = variable
12	W = $10^{-14} \text{ W m}^{-2}$
43	X = $10^{-18} \text{ W cm}^{-2}$
4	Y = relative line intensity
1	Z = $10^{-21} \text{ W cm}^{-2} \mu\text{m}^{-1} \text{ arcsec}^{-2}$

\* This column indicates the number of journal articles using each unit.







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Item	Code	Value	Unit	Material	Code	Value	Unit	Material
AFGL 41135	1 29 06	-15 23 00		10M	700302	-0.7M	115	700302
IC 131	1 30 22	-30 30 41		125	741005	-1.24M	115	741005
IC 132	1 30 27	-30 41		10M	770706	-0.7M	115	770706
IC 133	1 30 27	-30 41		305	780510	-1.1M	10M	780510
AFGL 230	1 30 27.2	-62 11 31		100	790105	3.34M	115	790105
	1 30 40	-62 10 54		10	741105	3.56M	115	741105
NGC 595	1 30 42	-30 25		50	780704	3.20M	10M	780704
NGC 598	1 31 06	-30 24		100	770706	-3.4M	10M	770706
M33 D	1 31 06	-30 30		1670	731203	1.29M	10M	731203
M33 E	1 31 07.2	-62 11 31		10	741105	0.35M	10M	741105
IC 142	1 31 07.2	-62 11 31		5 0	770706	5.45MU	10M	770706
CRL 230	1 31 07.2	-62 11 31		8 8	780913	-3.7M	10M	780913
				10 4	780913	-3.9M	10M	780913
				11 8	770706	-0.5M	10M	770706
				12 6	741105	3.99M	10M	741105
NGC 604	1 31 41	-30 32		0	780704	4.12M	10M	780704
				50	741105	4.19M	10M	741105
				100	780610	4.15M	10M	780610
				100	780205	4.08M	10M	780205
				100	780610	3.18M	10M	780610
AFGL 41205	1 32 15	-12 20 48		19 8	731203	2.30M	10M	731203
AFGL 2335	1 32 22	-23 21 06		11 0	770706	2.0M	10M	770706
AX PER	1 33 06	-54 00 17		5 0	700302	-3.3M	10M	700302
NGC 628	1 33 57	-15 32		10 2	780305	19.8	10M	780305
3C 48	1 34 12	-50 13		10	790509	-0.6M	10M	790509
M1-1	1 34 12	-50 13		10	741009	-3.4M	10M	741009
3C 48	1 34 49.8	-32 54 20		1570	789906	-3.2M	10M	789906
AFGL 240	1 35 29	-65 5 42		11 0	761201	-0.6M	10M	761201
MU 0136-29.8	1 38 28	-20 48		260	760913	3.65X	10M	760913
AFGL 41365	1 38 43	-1 51 12		19 8	741104	-3.9M	10M	741104
AFGL 41325	1 40 14	-58 32 48		11 0	770706	-1.2M	10M	770706
PHI PER	1 40 30.8	-50 25 16		5 0	650002	1.65C	10M	650002
				5 0	700302	2.20M	115	700302
				8 7	740807	1.77M	10M	740807
HD 10516	1 40 44.1	-61 35 56		10	780704	1.70M	115	780704
PHI PER	1 40 47	-22 54 18		11 0	740807	1.31M	10M	740807
PHI PER	1 42 02	-60 46 30		11 0	780302	-0.7M	10M	780302
PHI PER	1 42 11.7	-18 50 02		5 0	740807	1.55M	115	740807
				11 4	701105	1.77MU	115	701105
				11 5	740807	1.62M	115	740807
				22 0	700302	1.13M	115	700302
HD 10494	1 40 44.1	-61 35 56		8 7	741105	3.87M	10M	741105
AFGL 41345	1 40 47	-22 54 18		11 4	770706	3.73M	10M	770706
AFGL 41365	1 42 02	-60 46 30		11 0	700302	-0.7M	10M	700302
10B_PSC	1 42 11.7	-18 50 02		5 0	700302	0.75M	10M	700302
				10 2	700302	1.00M	10M	700302
AFGL 4009	1 43 59	-24 47 30		22 0	760913	-1.07M	10M	760913
MWC 17	1 44 12	-60 27		5 0	700302	3.66M	10M	700302
AFGL 2485	1 44 14	-64 17 30		11 0	770706	1.28M	10M	770706
AFGL 41405	1 44 20	-62 19 30		11 0	700302	-0.7M	10M	700302
AFGL 41415	1 44 48	-25 35 54		19 8	780913	-3.6M	10M	780913
AFGL 41425	1 45 41	-46 27 06		27 4	760913	-3.9M	10M	760913
AFGL 250	1 46 04	-29 34 42		11 0	790401	-6.7M	10M	790401
AFGL 253	1 47 14.1	-53 29 43		8 4	175	0.27M	175	175
				11 2	75	-0.38M	175	75
				12 5	10M	-0.18M	10M	10M
AFGL 251	1 47 18	-64 37 06		11 0	760913	-1.1M	10M	760913
AFGL 253	1 47 30	-53 28 00		11 0	741105	-1.3M	10M	741105
HD 11092	1 47 36.3	-64 35 27		8 7	741105	1.41M	10M	741105
				10 0	741105	1.44M	10M	741105
				11 4	741105	1.35M	10M	741105
				12 6	741105	1.40M	10M	741105
ALF UMI	1 48 48.8	-69 01 43		8 7	741008	0.44M	10M	741008
				10	741008	0.24M	10M	741008
				11 4	741008	0.39M	10M	741008
				12 6	741008	0.31M	10M	741008







NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS REF
AFGL 42205	2 40 18	+0 12 24	10 8	0.6J	55	780506	CS1
AFGL 371	2 40 44	-38 02 18	8 4	7.1JU	55	750701	CS1
AFGL 373	2 40 47	+38 02 24	11 0	0.6M	55	780506	CS1
AFGL 42225	2 42 40	+62 48 30	11 0	0.7M	55	780506	CS1
AFGL 3745	2 43 00	-1 29 42	11 0	-2.4M	55	780506	CS1
HCG 1097	2 44 20	-30 29	19 8	3.2M	5.7S	780305	RNGC
TX PER	2 44 53	+38 45 32	11 3	2.4M	17S	790401	GCVS
AFGL 377	2 44 55.5	+29 02 27	8 4	1.94M	17S	790401	CS1
AFGL 378	2 45 29	-12 30 18	12 5	1.94M	17S	780913	CS1
T ARI	2 45 32.0	+17 18 07	5 0	-14.5R	10M	740401	CS1
AFGL 379	2 45 32.0	+17 18 07	8 4	-0.48M	17S	790401	CS1
T ARI	2 45 32.0	+17 18 07	10 2	-15.5R	10M	740401	CS1
AFGL 379	2 45 32.1	-12 40 04	12 5	-0.94M	17S	790401	CS1
AFGL 378	2 45 32.1	-12 40 04	8 4	-0.18M	17S	710203	CS1
Z ER1	2 45 32.1	-12 40 04	8 4	0.18C	-	710405	RNGC
AFGL 378	2 45 32.1	-12 40 04	8 4	0.18C	-	710405	RNGC
AFGL 378	2 45 32.1	-12 40 04	11 0	-0.10CV	-	750104	CS1
AFGL 378	2 45 32.1	-12 40 04	11 0	-0.84C	-	710203	CS1
AFGL 379	2 45 34	+17 17 54	11 0	-0.75M	17S	790401	CS1
AFGL 379	2 45 34	+17 17 54	11 0	-0.23M	17S	790401	CS1
HD 17378	2 45 34	+17 17 54	8 7	-0.9M	10M	780913	CS1
HD 17378A	2 45 48.3	+55 52 38	10 0	3.45M	-	741105	CS1
HD 17378	2 45 48.3	+55 52 38	8 7	3.45M	-	780704	CS1
HD 17378A	2 45 48.3	+55 52 38	10 0	3.47M	-	780704	CS1
AFGL 416	2 59 13	-60 18 30	10 2	0.4M	10M	780913	AFGL
AFGL 4155	2 59 19	-16 33 00	11 0	-0.4M	10M	780913	AFGL
AFGL 416	2 59 22 0	-16 15 15	10 8	0.5M	10M	770706	AFGL
AFGL 4175	2 59 33	-16 25 12	19 8	-3.2M	10M	770706	AFGL
ALF GET	2 59 39 8	+ 3 53 40	5 0	-1.32C	-	840501	CS1
AFGL 419	2 59 42	-3 53 06	22 0	-1.68M	9S	731104	CS1
AFGL 4215	3 00 06	-22 58 24	19 8	-3.1M	10M	780913	CS1
AFGL 4225	3 00 09	-43 41 24	19 8	-3.3M	10M	780913	CS1
AFGL 4235	3 01 12	-9 18 30	11 0	-1.6M	10M	780913	CS1
AFGL 4265	3 01 33	-31 18 18	19 8	-3.6M	10M	780913	CS1
AFGL 4245	3 01 39	-15 24 00	19 8	-2.9M	10M	780913	CS1
AFGL 4285	3 01 51	-12 59 24	11 0	-1.3M	10M	780913	CS1
AFGL 428	3 01 54	-38 38 48	11 0	-2.5M	10M	780913	CS1
RHO PER	3 01 57 8	-38 38 53	5 0	-1.93M	10M	780302	CS1
BS 921	3 03 00	-55 33 36	8 4	-2.15C	-	710405	CS1
RHO PER	3 03 03	-55 33 03	10 0	10.1P	5	840201	CS1
AFGL 434	3 03 15	-74 31 48	10 2	-1.97M	-	870801	CS1
AFGL 437	3 03 31 7	-58 18 18	10 2	-2.08M	-	751004	CS1
AFGL 431	3 03 31 7	-58 18 18	10 2	-2.08M	-	751004	CS1
AFGL 4365	3 03 58	-31 12 48	19 8	-3.5M	10M	780913	GCVS
AFGL 437	3 03 58	-31 12 48	19 8	-3.5M	10M	780913	GCVS
AFGL 4385	3 04 54.3	-40 45 52	22 0	-2.57M	10M	780913	GCVS
BET PER	3 04 54.3	-40 45 52	22 0	-2.57M	10M	780913	GCVS
AFGL 443	3 07 11 3	-26 54 37	15 0	0.070JU	5	781201	RNGC
MCC 1232	3 07 28	-16 54 37	15 0	0.070JU	5	781201	RNGC
AFGL 453	3 07 38	-67 52 38	19 8	-0.7M	10M	780913	RNGC
AFGL 455	3 07 44	-47 55 46	19 8	-0.7M	10M	780913	RNGC
AFGL 455	3 07 44	-47 55 46	19 8	-0.7M	10M	780913	RNGC
AFGL 430	3 08 33	-55 32 24	19 8	-0.3M	10M	780913	RNGC
AFGL 42385	3 08 44	-4 01 00	11 0	-0.1M	10M	780913	RNGC
AFGL 457	3 08 49	-33 43 12	19 8	-3.1M	10M	780913	RNGC
AFGL 458	3 08 56	-74 43 48	19 8	-4.2M	10M	780913	RNGC
AFGL 42585	3 09 33	-55 31 22	11 0	-0.3M	10M	780913	RNGC
HD 20041	3 11 57.1	-26 57 22	8 7	3.57M	-	780706	CS1
AFGL 464	3 11 58	-46 23 54	11 4	3.51M	-	780913	CS1
AFGL 468	3 12 14	-64 34 05	11 0	-0.7M	10M	780913	CS1





Table with multiple columns containing alphanumeric codes, numerical values, and symbols. Includes labels like 'IC 351', 'ETA TAU', 'AFGL 521', etc.

NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS REF
TAU #10	4 29 37.7	+23 52 07	10	4.0M	-	760308	-
UZ TAU	4 29 39.2	+25 46 14	10	5.1MU	1M	780909	GCVS
TAU #11	4 29 39.2	+25 46 14	10	3.7M	1M	741108	-
IRC-20085	4 29 50	+22 33 30	10	0.6MU	1M	740705	IRC
GH TAU	4 30 01	+24 03 30	10	4.9M	1M	741108	GCVS
TAU #23	4 30 04.7	+24 03 18	10	5.6M	1M	780909	-
TAU #12	4 30 05.2	+24 03 39	10	0.6MU	1M	-	-
GK TAU	4 30 19	+24 15 28	8.4	5.3M	1M	-	GCVS
-	-	-	10	4.4M	1M	741108	-
-	-	-	10	4.3MV	-	760306	-
-	-	-	10	3.7MV	-	-	GCVS
-	-	-	11.1	1.7MU	1M	741108	-
GI TAU	4 30 19	+24 16 29	10	4.0M	1M	741108	GCVS
-	-	-	10	4.3MV	-	760308	-
-	-	-	10	1.7MU	1M	741108	-
3C 120	4 30 31.6	+5 14 58	18	0.1J	5S	700306	740903
-	-	-	10	0.2EJ	8S	720801	-
-	-	-	10	0.5J	Y	760308	-
-	-	-	10.2	0.22CJ	-	781209	-
-	-	-	10.6	0.5J	6S	720801	-
-	-	-	21	0.47CJ	-	781209	-
-	-	-	22	9.0JV	Y	700308	-
-	-	-	1000	7.0JV	5SS	780210	-
-	-	-	1570	15J	1M	761201	-
-	-	-	1670	3J	1M	780909	-
TAU #27	4 30 32.3	+24 15 04	10	3.8M	1M	780909	-
-	-	-	20	1.1MU	1M	-	-
-	-	-	10	4.0M	1M	-	-
TAU #28	4 30 32.7	+24 14 54	10	1.2MU	-	740705	IRC
IRC-50122	4 30 34	+47 08 08	8.6	0.4MU	1M	741108	GCVS
-	-	-	10.7	4.75MU	-	760306	-
DL TAU	4 30 36	+25 14 22	10	1.9M	1M	760913	-
AFGL 5915	4 30 40	+62 08 36	11.0	-1.9M	1M	-	-
-	-	-	19.8	-3.0M	1M	-	-
HN TAU	4 30 41	+17 52 27	8.4	4.6M	1M	760306	GCVS
-	-	-	10	4.5M	1M	741108	-
-	-	-	10	4.0M	-	760306	-
CI TAU	4 30 52	+22 43 50	11	5.0M	-	741108	GCVS
DM TAU	4 30 57	+18 03 37	10	4.75M	-	770708	GCVS
AFGL 5985	4 31 26	+29 50 18	11.0	-2.1M	1M	760913	-
AFGL 538	4 31 48	+8 20 06	11.0	-2.1M	1M	760913	-
AA TAU	4 31 54	+24 22 48	10	4.75M	1M	741108	GCVS
-	-	-	10	4.9M	-	760306	-
NGC 1614	4 31 54	+8 41	5.0	0.82J	6S	720801	RNGC
-	-	-	10	0.83J	-	-	-
-	-	-	10.6	8.5S	790405	-	-
-	-	-	21	5.7S	6S	720801	-
DN TAU	4 32 25	+24 08 56	10	4.0J	6S	720801	GCVS
AFGL 600	4 32 35	+28 25 48	11.0	5.3M	1M	760308	-
HP TAU	4 32 48	+22 48 18	10	-0.4M	1M	760913	-
-	-	-	18	3.9M	1M	741108	GCVS
-	-	-	10	1.4M	1M	-	-
ALF TAU	4 33 02.9	+16 24 37	5.0	-2.85C	-	640501	CSI
-	-	-	5.0	-2.87M	-	700302	-
BS 1457	-	-	5.0	-2.78M	0	751004	-
ALF TAU	-	-	8.4	-2.98M	12S	760107	-
-	-	-	8.4	-2.78C	-	710203	-
-	-	-	8.4	-2.97M	-	710403	-
-	-	-	8.4	-3.00M	-	751108	-
-	-	-	8.6	-3.0M	1M	740805	-
-	-	-	8.6	-3.0M	-	721203	-
-	-	-	8.6	-2.97M	-	741009	-
-	-	-	8.7	-2.98M	1M	740807	-
-	-	-	8.7	-2.98M	-	741008	-
-	-	-	8.7	-2.98M	-	741105	-
-	-	-	10	34.2F	5.9S	640201	-
-	-	-	10	-2.97M	1M	740807	-
-	-	-	10	-3.05M	12S	760107	-
-	-	-	10	-2.97M	-	720803	-
-	-	-	10	-2.97M	-	741008	-
-	-	-	10	-3.00M	-	741009	-
-	-	-	10	-3.1M	-	741107	-
-	-	-	10	-2.90M	-	781217	-
-	-	-	10.0	-2.97M	-	741105	-
-	-	-	10.1	-2.92M	-	751004	-
-	-	-	10.2	-2.97M	-	780803	-
-	-	-	10.2	-1.9F	10S	730011	-
-	-	-	10.2	-3.11M	-	700302	-
BS 1457	-	-	-	-	-	-	-
ALF TAU	-	-	-	-	-	-	-

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Station	Lat	Long	Time	Code	Alt	Wind	Temp	Pressure	Humidity	Clouds	Remarks
LKHA 16	40°S	4 27 00	-35 10 02	ED	200J	37S	75002				
LKHA 101	4 27 00	-35 10 42	100	740903	230J	37S	740605				
			8 4	75061	0.5CV	285	711105				
			10 8	265	-2.4M	265	760610				
			11 2	0.2CV	-2.5M	265	711105				
			12 2	0.1CV	-3.7M	265	711105				
			12 5	0.1CV	1.16F	135	770502				
			18	0.84F	0.16FU	135	790702				
			20	0.16FU	210J	37S	750702				
			25	210J	510J	37S					
			33	650J	510J	37S					
			40	510J	250J	37S					
			100	630J	630J	37S					
LKHA 101 40°N	4 27 00	-35 11 22	52	ED	82J	37S					
LKHA 101 80°N	4 27 00	-35 12 02	52	ED	77J	37S					
LKHA 101 40°E	4 27 03	-35 10 42	100	ED	450J	37S					
LKHA 101 80°E	4 27 05	-35 10 42	100	ED	130J	37S					
APQL 585	4 27 07	-35 09 54	11 0		-2.9M	10M	760913				
LKHA 101 120E	4 27 08	-35 10 42	52	ED	-4.4M	10M	790702				
UX TAU	4 27 09 9	+18 07 22	10	CSI	-16J	37S	741108				
JX TAU A			11 0		3.4MU	11S	730005				
FX TAU	4 27 13	+24 19 41	10	GCVS	5.7M						
DK TAU	4 27 40	+25 54 57	8 4	GCVS	3.1M	11S	741108				
			8 4		3.6M		760306				
			10		3.09MV	12S	760107				
			11 0		2.9M	11S	730005				
			11 1		2.9M		760306				
			12 6		3.07M	1M	780909				
TAU #8	4 27 40 4	+25 54 59	20	GCVS	1.4M						
HL TAU	4 28 45	+18 07 35	5 0	GCVS	3.8M	35S	740706				
			8 4		2.4MV	35S	780306				
			8 6		2.65M	11S	741108				
			10		2.5M	11S	760107				
			10 1		2.29MV	12S	760107				
			10 1		2.0MV		760306				
			11 1		2.2MV						
			11 3		2.1M	11S	741108				
			12 6		1.5M	35S	740706				
			12 6		1.4MV		760306				
			18		0.8M	11S	741108				
			20		-0.8MV		760306				
XZ TAU	4 28 46	+18 07 28	8 4	GCVS	3.58MV	12S	760107				
			8 4		3.8MV	11S	741108				
			10		2.0M	11S					
			10		3.22MV	12S	760107				
			11 1		3.12M	12S					
			11 1		2.9MV		780306				
			11 3		1.6M	11S	741108				
			12 6		-0.5M	11S	741108				
			18		0.6M		760306				
			20		5.3MU	11S	741108				
LKHA 286	4 29 03.6	+18 15 16	10	729902	5.5MU	10M	760913				
AFGL 589	4 29 04	+24 45 12	19 8	IRC	-3.9M	1M	760909				
TAU #9	4 29 09.6	+24 27 17	10		4.3M	1M					
TAU #23	4 29 13.5	+24 22 40	10 6		0.5M		740705				
IRC-30088	4 29 14	+31 00 30	10 7		-0.6M						
AFGL 591	4 29 28	-37 09 36	11 0		-0.9M	10M	760913				
TAU #25	4 29 30.1	+24 13 44	10		0.6MU	1M	780909				
HARO 6-18	4 29 34	+24 13	8 6	ED	4.10M		791211				
			10 3		3.55M						
			11 3		3.46M						
CG TAU	4 29 37	+17 25 25	18	GCVS	0.8MU						
			10		4.2M	11S	741108				

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NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS	REF	NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS	REF	
CRL 616	4 39 33.8	+36 01 15	35 53 8.7 10.1 11.2 12.5 20.0 34.0	1987J 1355J -1.7M -2.4M -2.5M -3.1M -4.7M -5.6M	455 225	751203						13 2 18 0 18 0 20 0 20 0 22 0 5 0 8 6	10 3F -2.1M 0.79F -2.92M 1.07F -2.06M 0.70M 0.7M					
DP TAU	4 39 34	+25 10 03	10	-5.6M	115	741108	GCYS		EPS AUR	4 58 22.5	+43 45 04	8 6	0.7M					
AFGL 4362S	4 39 34	-32 35 48	11 0	-1.6M	10M	770706						9 5	-1.42C					
AFGL 619	4 39 37	+6 47 12	11 0	-1.2M	10M	760913						10 2	8.9F					
AFGL 4364S	4 39 46	-27 28 30	11 0	-1.1M	10M	770706						10 2	1.05M					
AFGL 624	4 40 34.0	+32 46 24	8 4	0.61M	17S	790401						11 3	0.6M					
AFGL 622	4 40 59	+20 40 48	11 2	0.53M	17S				AFGL 671	4 58 57	+60 23	8 4	1.84M					
TAU #19	4 41 14.3	+25 19 20	10	0.78M	17S				ZET AUR	4 58 58.7	+41 00 18	12 5	2.11M					
AFGL 625S	4 41 49	-8 23 24	11 0	5.4M	1M	780909						11 3	0.0M					
IRC-20091	4 42 10	+24 37 24	10 7	0.7MU	10M	770706			AFGL 674	4 58 59	+41 01	8 4	0.00M					
AFGL 4370S	4 42 28	-2 41 24	11 0	-1.9M	10M	770706						11 2	-0.04M					
AFGL 630S	4 43 22	+14 58 00	11 0	-1.2M	10M				IRC-10076	4 59 05	+6 35 36	8 6	-0.02M					
AFGL 4372S	4 43 29	-30 44 48	19 8	-5.0M	10M				IRC-50134	4 59 29	+47 05 24	10 7	-0.3MU					
DQ TAU	4 43 59	+18 54 38	8 4	5.2M	10M	760306	GCYS		AFGL 4388S	4 59 43	-26 16 48	19 8	-3.2M					
RV TAU	4 44 01.8	+26 05 26	12 6	4.9M	11S	741108			UX ORI	5 02 01	-3 51 26	8 4	3.2M					
TAU #20	4 44 01.9	+26 05 26	20	-0.3M	1M	780909			AFGL 682	5 02 42	-21 58 48	11 0	-1.6M					
HARO 6-37	4 44 05 9	+16 57 19	10	4.5M	11S	741108	729902		AFGL 683	5 02 45	+1 05 48	11 0	-1.5M					
DR TAU	4 44 12	+16 53 19	10	3.25M	11S	760306	GCYS		J320	5 02 48	+10 38	10 0	4.4MU					
IRC-50127	4 44 25	+47 33 06	18 6	1.3M	11S	741108			W ORI	5 02 48 6	+1 06 38	8 4	-1.24C					
AFGL 632	4 44 38	+81 25 48	10 7	1.4MU	1M	740705	IRC					8 4	9.76F					
OS TAU	4 44 39	+29 20 00	10	-1.3M	10M	760913						8 4	761005					
KS PER	4 45 20.1	+43 11 19	11 0	4.8M	22S	730005	GCYS					11 0	-1.74C					
TAU #21	4 45 44.1	+25 32 59	8 5	0.8MU	1M	780909						11 0	4.27F					
AFGL 4376S	4 45 45	-36 17 48	27 4	-6.6M	10M	770706			AFGL 687	5 03 13	+50 19 18	11 0	-1.3M					
ST CAM	4 46 01.3	+68 05 01	8 6	0.5M	10M	721103			AFGL 688	5 03 26	-22 27 00	11 0	-1.2M					
AFGL 633	4 46 08	+68 05 48	12 2	1.26F	10M	760913			AFGL 4391S	5 03 59	-0 28 00	11 0	3.2M					
AFGL 634	4 46 12	-3 57 30	19 8	-2.4M	10M				RM AUR	5 04 37.7	+30 20 14	8 4	3.7MV					
AFGL 635	4 46 32.4	+37 24 07	11 2	0.5MV	1M							8 4	3.2MV					
11 ZW 23	4 47 00	+3 15	12 5	1.32M	1M							10 1	3.20MV					
AFGL 4382S	4 47 44	+88 51 30	18 8	-2.6M	10M	770706						11 0	3.0MV					
IRC-20094	4 47 47	+15 42 30	10 7	-0.5MU	10M	740705	IRC					11 0	3.0CV					
AFGL 639	4 48 23	+28 28 36	10 7	0.25M	17S	790401						12 6	3.1MV					
UY AUR	4 48 36	+30 42 14	11 2	0.02M	17S							20	1.2MV					





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NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS	REF	NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS	REF
AFGL 752	5 25 18	+17 11 48	10.8	3.0M	10M	780913			ORION NEB	7 5 32 43.0	5 23 18	88.4	0.005E	1.5M	780807		
AFGL 754	5 25 28	+32 25 12	11.0	1.2M	10M	71201			ORION NEB	2 5 32 45.0	5 23 10	88.4	0.011E	1.5M	780807		
HFE 1	5 25 41	- 5 03 42	10.0	15000J	10M	71201			OMC POS 8	5 32 45.8	5 23 50	12.3	0.001EU	7.5	781207	ED	
AFGL 4418S	5 26 04	+ 0 03 42	11.0	0.2M	10M	780913			OMC POS 7	5 32 45.8	5 24 14	12.3	0024E	7.5	781207	ED	
AFGL 755	5 26 05	-20 49 05	11.0	0.9M	10M	780913			ORION NEBULA	5 32 46.0	5 24 00	12.3	0035EU	15S	780908		
GN ORI	5 26 20.8	+11 49 52	5.0	3.28M	15	780005	CSI		LX ORI	5 32 46.2	5 24 01	12.3	5.2M	11S	741108	GCVS	
			8.4	2.80MV	12S	780107			OMC POS 1	5 32 46.2	5 24 01	12.3	0023E	7.5	781207	ED	
			10.2	1.88M	15S	780302			OMC POS 4	5 32 46.2	5 24 28	17.3	0028E	2.7M	790810		
			11.0	2.2MV	12S	780107			KL NEBULA	5 32 46.3	5 24 28	17.3	2010A	2.7M	790810		
			18.1	1.53MV	12S	780107			OMC POS 5	5 32 46.4	5 23 50	18.7	0023E	7.5	781207	ED	
			22.0	-0.34M	11S	780005	CSI		KL REGION A	5 32 46.4	5 23 17	11.1	8E5B	10S	741108		
S ORI	5 26 32.7	- 4 43 51	5.0	-0.90M	10M	741002			ORION NEBULA	5 32 46.5	5 24 28	33	8900J	58S	740702	ED	
			20	-2.45M	11S	741108	GCVS		M42	5 32 46.5	5 24 40	350	20000J	3.5M	740702		
V449 ORI	5 26 35	+11 49 38	10	4.55M	10M	780913			KL NEBULA 1"	5 32 46.7	5 23 34	350	1380J	1M	721003	ED	
AFGL 757	5 26 40	- 4 46 48	11.0	1.7M	10M	780913			KL NEB. IRC1	5 32 46.7	5 24 17	5	170JV	V	731102		
HFE 2	5 26 55	- 4 46	17.0	15000J	12M	711201			BN			21	410JV	V	760601		
			50.0	3.5500U	5M	770708			OMC POS 10	5 32 46.7	5 24 18	1230	128J	V	760601		
AFGL 760S	5 27 34	+15 06 18	18.8	-3.9M	10M	770708			OMC-1	5 32 46.7	5 24 19	870	0001EU	7S	781207	ED	
AFGL 4418S	5 27 54	-42 39 30	18.8	-3.8M	10M	770708			KL NEB. IRC3	5 32 46.7	5 24 25	5	30005E	3S	731106		
V448 ORI	5 28 03	+12 08 26	10	4.6MU	10M	741108			ORION NEBULA	5 32 46.7	5 24 28	21	170J	V	800804		
AFGL 761	5 28 08	-18 30 48	11.0	1.7M	10M	780913			KL NEBULA	5 32 46.7	5 24 34	8	5.0	-1.07M	700302	670701	
AFGL 4419S	5 28 28	- 6 55 48	11.0	-0.5M	10M	770708			BN-KL			8	8.5	S	730106		
HI ORI	5 28 38	+12 07 35	10	4.6M	11S	741108			KL NEBULA			8	8.6	-2.0M	751102		
HK ORI	5 28 40	+12 06 59	5.0	5.13M	11S	730008			BN-KL			10	10.1	9.2F	28S		
			8.4	3.01MV	12S	780107			KL NEBULA			10	10.2	10.3F			
			10.2	2.67MV	12S	780107			KL NEBULA			10	10.2	-2.61M			
			11.0	2.73M	12S	780302			KL NEB. IRC2			10	10.5	180J			
			11.1	2.9M	11S	730006			KL NEBULA			10	10.5	731102			
			18.1	1.0M	11S	730006			BN-KL			10	10.7	12S	730303		
			22.0	1.20M	12M	700302			KL NEBULA			10	10.7	-0.8M			
HFE 3	5 28 48	- 4 55	100	20000J	12M	711201			BN-KL			10	10.7	-2.0M			

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IR	5 29 03	-41 26 00	500	B. 355GU	5M	791003	711201	IR
IRC-40132	5 29 06	+18 31 18	10.7	1.3MU	740705	711201	IRC	
AFGL 767	5 29 13	-12 24 48	11.0	0.3MU	760913			
AFGL 765S	5 29 18.8	+18 33 32	7.5	-1.6M	10M 770706	CSI		
119. TAU			8.4	-0.70M	700805			
			8.4	-1.00C	710203			
			10.2	-1.07C	670801			
			11.0	-0.80C	700302			
			11.0	-1.26M	710403			
			11.0	-1.35C	710405			
			11.3	-1.33M	721203			
			20	-1.82M	741002			
CE TAU	5 29 23	-35 29 54	11.0	-1.1M	10M 760913	CSI		
AFGL 766	5 29 27.0	-0 20 02	8.6	2.98M	11S 770504			
DFL ORI			11.3	2.73M	11S "			
			18	0.22MU				
			18	3.26M	11S "			
CHI AUR	5 29 28.3	+32 09 25	10	3.9M	22S 730005	CSI		
RY ORI	5 29 39	-2 51 54	11.0	4.5MU	11S 741108	GCVS		
SAN 1	5 30 08	-3 08	10	-0.3M	10M 770706	729902		
AFGL 4420S	5 30 30	-17 49 12	11.0	-1.1M	10M 760913			
AFGL 771	5 30 35	-5 28 29	100	4.8MU	11S 741108	GCVS		
V466 ORI	5 31 09	-5 42	100	33000J	12M 711201			
HFE 4	5 31 13	-5 19 18	11.0	-0.7M	10M 770706	729902		
AFGL 772S	5 31 20	-21 11	10	4.8MU	11S 741108	ED		
SAN 2 SW	5 31 22	+21 58	50	-12J	40S 781220			
CRAB 2 SW			100	2.11J	40S 781220			
CRAB #B	5 31 25	+22 00 00	1230	65.8JU	-	780601		
CRAB #E	5 31 28	-21 58 40	1230	74.0JU	-			
NGC 1952	5 31 30	+21 59	5.0	2.63M	-	700302	RNGC	
CRAB NEBULA			10	138J	4M 710904			
			50	-17J	40S 781220			
M1			91	24000JU	7M 740908			
CRAB NEBULA			100	2.8J	40S 781220			
			300	35J	1.9M 790610			
			400	41J	1.9M			
			1000	75J	3.2M			
CRAB #A	5 31 30	+21 59 43	1230	73.3J	-	780601		
CRAB PULSAR	5 31 31.5	+21 58 55	1230	31.2J	-			
CRAB #D	5 31 34	+21 57 55	1230	62.6JU	-			
CRAB #C	5 31 35	+21 59 50	1230	54.0JU	-			
AFGL 776	5 31 57	-5 14 48	11.0	-1.3M	10M 760913	GCVS		
XX ORI	5 32 10	-6 07 29	10	4.25MU	11S 741108	GCVS		
IX ORI	5 32 13	-5 24 36	10	4.4MU	11S			
V372 ORI	5 32 19.7	-5 36 10	8.4	2.8MV	11S 730005	CSI		
			11.0	2.7MV	11S			
			18	-1.3MU	26S			
YY ORI	5 32 21	-5 59 54	10	4.8MU	11S 741108	GCVS		
LAM ORI	5 32 23 1	+9 54 12	8.7	3.94M	11S 740807	CSI		
HD 36861			8.7	3.94M	-	780704		
LAM ORI			10	0.119F	V 660501			
			10	3.89M	11S 740807			
			10	3.91M	11S 770504			
			10	3.89M	11S 780704			
HD 36861			10.7	0.8MU	-	730303		
LAM ORI			11.4	3.79M	11S 740807			
			11.4	3.79M	11S 780704			
HD 36861			19.8	-4.0M	10M 760913			
AFGL 4425S	5 32 29	-6 09 12	19.8	-4.0M	10M 760913			
AFGL 780	5 32 35	+8 40 06	11.0	-2.4M	10M			
AFGL 781	5 32 36.6	-4 56 24	11.0	3.4MU	11S 730005	CSI		
KX ORI	5 32 41	-4 29 32	10	4.9MU	11S 741108	GCVS		
SY ORI	5 32 41	-4 29 32	61	4500J	3.5M 780502			
OMC-3	5 32 42.3	-4 58 55	105	8300J	3.5M			
			327	4900JU	9M			
M42 W	5 32 42.5	-5 24 30	1000	66J	65S 740402	ED		
LP ORI	5 32 42.5	-5 29 46	8.4	2.6MU	11S 730005	CSI		
			8.6	2.6M	12S 730303			
			10.7	2.8M	25S			
			10.7	2.8M	12S			
			10.7	0.8MU	25S			
			11	3.8MU	15S			
			11	2.5M	12S			
			11	0.9M	25S			
			11.0	3.0M	11S 730005			
			18	-1.8M	12S 730303			
			18	-1.9MV	25S			
			18	-1.8M	26S 730005			



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Item	Code	Value	Unit	Material	Quantity	Weight	Volume	Notes
THE 1 ORI	125	-1.9M	125					
ORION NEB. 4	255	-4.92M	255					
M42	700302	0.011E	1.5M	700302	10.8	1.94M	115	700302
	755	130X	755	791008	11.0	1.8M	115	730006
	755	120X	755	791008	11.3	1.7M	115	730006
ORION A	7-0601	47.8J	55	730303	12.8	0.3M	115	730006
TRAPEZIUM #2	CS	1.9M	9.25	751102	22.0	0.86M		700302
THE 1 ORI D	ED	38001E	9.25	751102	80	0.35J		790702
	CS1	0.2M	55	730303	10	2.4M		660501
	ED	0.6M	55	730303	5	1.0MU		701105
TRAPEZIUM #2	ED	30001E	9.25	751102	8.5	1.87M		749807
THE ORI D	CS1	0.1M	55	730303	10.4	1.85M		
TRAPEZIUM #2	ED	20001E	9.25	751102	11.4	1.72M		
THE 1 ORI D	CS1	18001E	9.25	730303	12.6	1.82M		
M42	CS1	-1.9M	55	730303	8.4	3.2M		730006
	ED	3.9E5J	5M	740908	11.0	3.1M		
ORION A	ED	4.2E5J	5M	740803	11.0	1.8M		760913
M42	ED	1.5E5J	1.5M	740908	11.0	1.7M		
	ED	4.1E5J	5M	740908	19.8	5.1M		
	ED	3.1E5J	5M		8.4	0.24M		
	ED	1.4E5J	8.4M		8.6	-0.02M		
AFGL 779		-5.1M	10M	780913	10.2	-0.45M		
ORION NEB. 5		0.010E	1.5M	780807	11.1	-0.59M		
M42 E		182J	655	780402	12.2	-0.98M		
ORION A		152J	655	780402	12.6	-0.84M		
P1931		4.9MU	115	741108	12.8	-0.98M		
NGC 1976		350J	135	690705	18	-2.51M		
M42		S	5M	760409	22	-2.60M		
		P	6M	770102	11.0	-1.0M		10M 760913
		65F	8M	809902	19.8	-3.5M		10M 730005
		80F	8M		8.4	3.4MU		22S 730005
		30F	8M		11.0	3.2MU		11S 730006
		S	8M		10	5.0MU		11S 730006
		20F	8M		18	0.2M		11S 730006
M42 IRE1		4.9E5J			18	0.2M		10M 770706
M42 IRE3		2.0E5J			8.7	3.19M		11S 740807
ORION NEB. 6		0.011E	1.5M	780807	10	3.13M		11S 740807
ORION POS 4		S	7S	790811	11.4	3.14M		11S 740807
ORION POS A		S	7S		11.0	-0.5M		10M 760913
ORION POS 3.5		3.0MU	115	730005	11.0	-0.5M		10M 760913
MX ORI		1.4E6W	115	730005	10	4.7M		11S 741108
UCL 1		S	7S	730901	11.0	0.0M		10M 770206
ORION POS3.25		2.9M	115	730005	11.0	1.11M		10M 760913
CQ TAU		2.65M	115	730005	100	15000J		12M 711201
		1.9M	115		8.7	0.08M		11S 760606
		1.9M	115		10	-0.45M		11S 760606
		1.8M	115		11.4	-0.44M		11S 760606
		2.0M	115		19.5	-0.95M		11S 760606
		-0.3M	115		23	1.02MU		11S 760606
42 ORI		-1.3MU			8.7	2.21M		11S 740807
THE 2 ORI A		2.9M	125		10	1.85M		11S 740807
		1.3MV	255		11.4	2.10M		11S 740807
		1.8M	125		11.0	-1.2M		10M 760913
		0.2MV	255		8.6	2.25M		11S 770504
		3.5MV	55		8.7	2.31M		11S 740807
		2.7M	125		10	2.53M		11S 770504
		0.4MV	255		10.7	2.30M		11S 770504
		1.3M	125		11.3	2.42M		11S 770504
		-0.7MV	255		11.4	2.18M		11S 770504
		S	2.7M	790810	12.6	1.98M		10M 760913
THE 2 ORI A		-1.6M	255	730303	11.0	-1.0M		10M 760913
		-2.3MV	255		11.0	-1.9M		10M 760913
THE 2 ORI		1410X	2.7M	790810	19.8	-5.2M		10M 760913
ORION POS 2		29000J	125	790811	27.4	-6.5M		10M 760913
THE 2 ORI B		S	17M	730303	30	100J		10M 780801
		2.7M	255		50	50J		1M 780801
		1.6MV	255		100	60J		1M 780801
		0.8M	125		30	-80J		1M 780801
		0.5MV	255		50	70J		1M 780801
		3.5M	55		100	40J		1M 780801
		2.6M	125		50	30J		1M 780801
		1.3MV	255		100	10J		1M 780801
		-0.4M	125		30	-210J		1M 780801

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NAME	RA (1950)	DEC	WAVE	FLUX	BEAM BIBLIO POS REF	NAME	RA (1950)	DEC	WAVE	FLUX	BEAM BIBLIO POS REF
30 DOR #5	5 38 42	-69 09 35	50	20J	IM	30 DOR #41	5 39 09	-69 08 05	50	180J	IM
30 DOR #6	5 38 48	-69 06 05	50	310J	IM	HD 37903 40"E	5 39 10 0	-2 16 58	100	200J	8S 800205
30 DOR #7	5 38 48	-69 07 05	50	130J	IM	HD 37903 60"E	5 39 11 3	-2 16 58	40	131J	9S
30 DOR #8	5 38 48	-69 07 35	50	150J	IM	NGC 2024	5 39 12	-1 55 42	610	129J	8S
30 DOR #9	5 38 48	-69 08 05	50	220J	IM	AFGL 807	5 39 12	-1 56 54	11.0	92J	8S
30 DOR #10	5 38 48	-69 08 35	50	170J	IM	HD 37903 80"E	5 39 12 6	-2 16 58	100	2.5M	800802
30 DOR #11	5 38 54	-69 06 35	50	280J	IM	NGC 2024 #2	5 39 14 3	-1 55 59	8 4	10M	750913
30 DOR #12	5 38 54	-69 07 05	50	300J	IM	30 DOR #43	5 39 14	-69 05 35	30	300J	IM
30 DOR #13	5 38 54	-69 07 35	50	340J	IM	30 DOR #44	5 39 14	-69 06 05	50	300J	IM
30 DOR #14	5 38 54	-69 08 05	50	570J	IM	30 DOR #45	5 39 14	-69 06 35	100	370J	IM
30 DOR #15	5 38 54	-69 08 35	50	520J	IM	30 DOR #46	5 39 14	-69 07 05	50	430J	IM
30 DOR #16	5 38 54	-69 09 35	50	270J	IM	30 DOR #47	5 39 14	-69 07 35	100	530J	IM
30 DOR #17	5 38 54	-69 10 05	50	40J	IM	30 DOR #48	5 39 14	-69 08 35	30	210J	IM
HD37903 180"W	5 38 56.6	-2 16 58	50	77J	8S 800205	NGC 2024 #2	5 39 14 3	-1 55 59	100	0.80M	741007
30 DOR #18	5 38 59	-69 05 05	50	120J	IM	RNO 54	5 39 18	-22 36	8 6	1.62M	
30 DOR #19	5 38 59	-69 05 35	50	100J	IM	30 DOR #49	5 39 19	-69 05 35	187	1.00M	
30 DOR #20	5 38 59	-69 06 05	50	130J	IM	30 DOR #50	5 39 19	-69 06 05	100	0.54M	
30 DOR #21	5 38 59	-69 06 35	50	200J	IM	30 DOR #51	5 39 19	-69 06 35	50	3.02M	800101
30 DOR #22	5 38 59	-69 07 05	50	390J	IM	30 DOR #52	5 39 19	-69 07 05	100	3.02M	
30 DOR #23	5 38 59	-69 07 35	50	330J	IM	NGC 2024	5 39 19	-1 55 42	58	2.70M	
30 DOR #24	5 38 59	-69 08 05	50	370J	IM	30 DOR #53	5 39 24	-69 05 05	18	2.30M	
30 DOR #25	5 38 59	-69 08 35	50	310J	IM	30 DOR #54	5 39 24	-69 06 05	50	0.25M	
HD37903 120"W	5 38 59.3	-2 16 58	50	14J	8S 800205	30 DOR #55	5 39 24	-69 07 05	100	75000J	5M 740908
DL ORI	5 39 00	-1 55 00	100	3.25M	11S 741108	30 DOR #56	5 39 24	-69 07 35	30	88000J	8.4M
SAN 5	5 39 01	-8 07 23	10	4.5MU	11S 741108	NGC 2022	5 39 20	-9 03	388	55000J	5M
HD 37903 80"W	5 39 02.0	-2 16 58	50	165J	8S 800205	NGC 2024 #2	5 39 20	-1 51 52	408	34000J	5M 780801
HD 37903 60"W	5 39 03.3	-2 16 58	40	153J	8S	NGC 2024 #1	5 39 24	-1 51 52	388	170J	IM
			50	105J	8S	30 DOR #53	5 39 24	-69 05 05	444	280J	IM
			100	161J	8S	30 DOR #54	5 39 24	-69 06 05	50	200J	IM
			180	114J	8S	30 DOR #55	5 39 24	-69 07 05	100	210J	IM
AFGL 805	5 39 04	-32 00 24	11.0	-10J	10M 780913	30 DOR #56	5 39 24	-69 07 35	100	220J	IM
30 DOR #26	5 39 04	-69 03 35	30	-10J	IM 780801				100	220J	IM

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Object	RA	Dec	Mag	Filter	RA	Dec	Mag	Filter	Object	RA	Dec	Mag	Filter	Object	RA	Dec	Mag	Filter
30 DOR #27	5 39 04	-69 04 35	100	0J	5 39 26	-1 51	100	0J	NGC 2024	5 39 26	-1 51	100	0J	30 DOR #27	5 39 04	-69 04 35	100	0J
30 DOR #28	5 39 04	-69 05 05	100	0J	5 39 26	-1 51	100	0J	30 DOR #28	5 39 26	-1 51	100	0J	30 DOR #28	5 39 04	-69 05 05	100	0J
30 DOR #29	5 39 04	-69 05 35	100	0J	5 39 26	-1 51	100	0J	30 DOR #29	5 39 26	-1 51	100	0J	30 DOR #29	5 39 04	-69 05 35	100	0J
30 DOR #30	5 39 04	-69 06 05	100	0J	5 39 26	-1 51	100	0J	30 DOR #30	5 39 26	-1 51	100	0J	30 DOR #30	5 39 04	-69 06 05	100	0J
30 DOR #31	5 39 04	-69 06 35	100	0J	5 39 26	-1 51	100	0J	30 DOR #31	5 39 26	-1 51	100	0J	30 DOR #31	5 39 04	-69 06 35	100	0J
30 DOR #32	5 39 04	-69 07 05	100	0J	5 39 26	-1 51	100	0J	30 DOR #32	5 39 26	-1 51	100	0J	30 DOR #32	5 39 04	-69 07 05	100	0J
30 DOR #33	5 39 04	-69 07 35	100	0J	5 39 26	-1 51	100	0J	30 DOR #33	5 39 26	-1 51	100	0J	30 DOR #33	5 39 04	-69 07 35	100	0J
30 DOR #34	5 39 04	-69 08 35	100	0J	5 39 26	-1 51	100	0J	30 DOR #34	5 39 26	-1 51	100	0J	30 DOR #34	5 39 04	-69 08 35	100	0J
30 DOR #35	5 39 04	-69 09 35	100	0J	5 39 26	-1 51	100	0J	30 DOR #35	5 39 26	-1 51	100	0J	30 DOR #35	5 39 04	-69 09 35	100	0J
HD 37903 40"N	5 39 04.8	-2 16 58	100	0J	5 40 33 3	-32 40 49	100	0J	HD 37903 40"N	5 39 04.8	-2 16 58	100	0J	HD 37903 40"N	5 39 04.8	-2 16 58	100	0J
AFGL 806	5 39 06	-2 17 00	100	0J	5 40 33 3	-32 40 52	100	0J	AFGL 806	5 39 06	-2 17 00	100	0J	AFGL 806	5 39 06	-2 17 00	100	0J
NGC 2024 #1	5 39 06.3	-1 56 10	100	0J	5 40 33 3	-32 40 52	100	0J	NGC 2024 #1	5 39 06.3	-1 56 10	100	0J	NGC 2024 #1	5 39 06.3	-1 56 10	100	0J
NGC 2023	5 39 07	-2 17 42	100	0J	5 40 33 3	-32 40 52	100	0J	NGC 2023	5 39 07	-2 17 42	100	0J	NGC 2023	5 39 07	-2 17 42	100	0J
HD37903 200"N	5 39 07.3	-2 13 38	100	0J	5 40 33 3	-32 40 52	100	0J	HD37903 200"N	5 39 07.3	-2 13 38	100	0J	HD37903 200"N	5 39 07.3	-2 13 38	100	0J
HD37903 160"N	5 39 07.3	-2 14 18	100	0J	5 40 33 3	-32 40 52	100	0J	HD37903 160"N	5 39 07.3	-2 14 18	100	0J	HD37903 160"N	5 39 07.3	-2 14 18	100	0J
HD37903 120"N	5 39 07.3	-2 14 58	100	0J	5 40 33 3	-32 40 52	100	0J	HD37903 120"N	5 39 07.3	-2 14 58	100	0J	HD37903 120"N	5 39 07.3	-2 14 58	100	0J
HD 37903 80"N	5 39 07.3	-2 15 36	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37903 80"N	5 39 07.3	-2 15 36	100	0J	HD 37903 80"N	5 39 07.3	-2 15 36	100	0J
HD 37903 60"N	5 39 07.3	-2 15 58	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37903 60"N	5 39 07.3	-2 15 58	100	0J	HD 37903 60"N	5 39 07.3	-2 15 58	100	0J
HD 37803 40"N	5 39 07.3	-2 16 18	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37803 40"N	5 39 07.3	-2 16 18	100	0J	HD 37803 40"N	5 39 07.3	-2 16 18	100	0J
HD 37903	5 39 07.3	-2 16 58	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37903	5 39 07.3	-2 16 58	100	0J	HD 37903	5 39 07.3	-2 16 58	100	0J
HD 37903 40"S	5 39 07.3	-2 17 38	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37903 40"S	5 39 07.3	-2 17 38	100	0J	HD 37903 40"S	5 39 07.3	-2 17 38	100	0J
HD 37903 60"S	5 39 07.3	-2 17 58	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37903 60"S	5 39 07.3	-2 17 58	100	0J	HD 37903 60"S	5 39 07.3	-2 17 58	100	0J
HD 37903 80"S	5 39 07.3	-2 18 18	100	0J	5 40 33 3	-32 40 52	100	0J	HD 37903 80"S	5 39 07.3	-2 18 18	100	0J	HD 37903 80"S	5 39 07.3	-2 18 18	100	0J
HD37903 120"S	5 39 07.3	-2 18 58	100	0J	5 40 33 3	-32 40 52	100	0J	HD37903 120"S	5 39 07.3	-2 18 58	100	0J	HD37903 120"S	5 39 07.3	-2 18 58	100	0J
HD37903 160"S	5 39 07.3	-2 19 38	100	0J	5 40 33 3	-32 40 52	100	0J	HD37903 160"S	5 39 07.3	-2 19 38	100	0J	HD37903 160"S	5 39 07.3	-2 19 38	100	0J
30 DOR #37	5 39 09	-69 05 35	100	0J	5 40 33 3	-32 40 52	100	0J	30 DOR #37	5 39 09	-69 05 35	100	0J	30 DOR #37	5 39 09	-69 05 35	100	0J
30 DOR #38	5 39 09	-69 06 05	100	0J	5 40 33 3	-32 40 52	100	0J	30 DOR #38	5 39 09	-69 06 05	100	0J	30 DOR #38	5 39 09	-69 06 05	100	0J
30 DOR #39	5 39 09	-69 06 35	100	0J	5 40 33 3	-32 40 52	100	0J	30 DOR #39	5 39 09	-69 06 35	100	0J	30 DOR #39	5 39 09	-69 06 35	100	0J
30 DOR #40	5 39 09	-69 07 05	100	0J	5 40 33 3	-32 40 52	100	0J	30 DOR #40	5 39 09	-69 07 05	100	0J	30 DOR #40	5 39 09	-69 07 05	100	0J





ORIGINAL PAGE IS  
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Code	Description	Account	Rate	Amount	Balance	Category	Account	Rate	Amount	Balance	Category
5 0	-3.99C	640501									
5 0	-4.02C	650002									
5 0	-4.37M	700302									
5 0	-4.26M	700502									
7	S	890304									
7	S	105 740303									
8	200F	730014									
8	-4.8M	730808									
8 3	-4.79C	710203									
8 4	-4.76M	710405									
8 4	-4.78C	710403									
8 4	-4.70M	730002									
8 5	-4.8M	700907									
8 6	-4.75M	720202									
8 6	-4.7M	721103									
8 6	-4.7M	730303									
8 99	170F	105 790812									
9	155F	890306									
10	168F	5 95 640201									
10	-4.77C	670801									
10	P	720803									
10	-5.2M	741107									
10 1	-4.80M	681101									
10 1	-5.0M	691102									
10 2	-5.25M	700302									
10 2	-5.05M	700502									
10 2	-5.05M	720002									
10 2	-5.9M	770808									
10 4	-4.91C	640501									
10 4	-4.87C	650002									
10 5	-5.150F	790812									
10 7	-5.55M	720202									
10 7	-5.5M	730303									
10 8	-5.7M	721103									
10 8	-5.4M	712003									
11	-5.56M	710403									
11	-5.3M	730303									
11	D	771008									
11 0	-5.51C	710203									
11 0	-5.52C	710405									
11 1	-5.6M	770608									
11 2	-5.41M	730002									
11 3	-5.5M	721203									
11 3	-5.5M	700907									
12 2	-5.50M	720202									
12 2	-5.5M	721103									
12 2	-5.5M	730303									
12 8	-5.5M	105 790812									
12 8	-5.5M	721203									
18	S	791015									
18	-5.65M	720202									
18	-5.6M	721203									
18	-5.6M	730303									
18 0	-5.7M	721103									
18 5	-6.0M	691102									
20	-5.74M	95 731104									
20	-5.67M	105 721002									
20	14.5F	305 791015									
20	-5.6M	721203									
20	-5.7M	741107									
20	-5.74M	751002									
21	-5.78M	1M 721005									
22	-5.05M	700502									
22 0	-5.6M	721203									
25	-5.78M	700302									
25	-5.75M	751002									
33	-5.92M	780101									
33	734J	760J									
34	650J	8.55									
34	740J	740J									
34	3.6MU	255									
8 6	4.1M	720301									
10	2.7J	115									
11	2.8M	741009									
11	0.6M										
18 4	-2.11C	710203									
8 4	-1.80M	710403									
8 4	-2.11C	710405									
IC 2149	5 52 41	-48 06									
U ORI	5 52 51.0	+20 10 06									



ORIGINAL FROM THE  
OF POOR QUALITY

Call Sign	Time	Lat	Long	Alt	Mode	Class	Power	Frequency	Remarks
AFGL 927	8 20 45	49 18 30							
PSI 1 AUR	8 21 02	9 49 18 57			CSI				
IRC-10120	6 21 24	-14 15 12			IRC				
AFGL 4493S	8 21 48	-25 32 08			CSI				
T MON	8 22 31	0 7 08 52							
BL DRI	6 22 38	9 14 45 04							
AFGL 933	8 22 38	-9 28 30							
AFGL 934	8 22 43	-14 4 38							
ALF CAR	8 22 50	5 -52 40 04			CSI				
J900	6 23 00	+17 49			P-K				
AFGL 935	6 23 02	-9 29 08							
CHL 935	6 23 04	8 -9 30 57							
AFGL 937	6 23 15	-19 06 00							
AFGL 938	6 23 32	-68 57 24							
AFGL 940	6 23 55	-9 02 54							
IRC-10123	6 24 04	+10 26 06			IRC				
AFGL 4456S	6 24 05	+10 25 48							
AFGL 942S	6 24 08	-7 49 12							
HD 45314	6 24 24	4 -14 55 14			CSI				
AFGL 944	6 24 34	-19 35 18							
IRC-20146	6 24 56	-20 35 24			IRC				
AFGL 4498S	6 25 13	+49 32 54							
HD 45677	6 25 59	1 -13 01 11							
MUU :EM	6 25 59	7 +20 14 44			CSI				
AFGL 4061	6 26 02	+44 47 00							
BET MON A	6 26 23	4 -6 59 57							
AFGL 4062	6 27 04	-72 47 24							
HD 45628	6 27 19	3 +7 57 22			CSI				
LWA 340	6 27 34	5 +10 33 55							
AX MON	6 27 52	4 -5 54 07			CSI				
AFGL 980	6 27 56	+27 28 42							
LWA 341	6 28 04	1 -10 35 18							
AFGL 951S	6 28 18	+10 27 30							
VY MON	6 28 20	-10 27 58			GCYS				
AFGL 977	8 34 56	-1 21 18							
AFGL 982	8 36 09	-59 54 30							
R MON 40-S	6 36 25	4 -8 47 21							
R MON	6 36 25	4 -8 48 01							
AFGL 977	6 38 25	4 -8 48 41							
R MON 40-N	6 38 25	4 -8 48 41							
AFGL 4517S	6 38 33	-13 17 24							
NGC 2264 W48	6 37 37	-9 49							
AFGL 4518S	6 37 40	-9 14 54							
NGC 2264 W90	6 38 00	-9 51							
LR MON	6 38 02	-9 52 26							
NGC 2264 W100	6 38 05	-9 55							
NGC 2264 W108	6 38 07	-9 48							
AFGL 4519S	6 38 08	-9 47 48							
15 MON	6 38 13	4 -9 50 37							
TP MON	6 38 18	-9 35 32							
V360 MON	6 38 21	-9 39 19							
NGC 2264 A	6 38 22	-9 25 42							
HD 47887	6 38 24	8 -9 30 49							
NGC 2264 IRS	6 38 24	9 -9 32 29							
ALLEN IRS	6 38 25	-9 32 30							
NGC 2264 W67	6 38 25	-9 57							
NGC 2264 W228	6 38 25	3 -9 32 25							
NGC 2264 W158	6 38 25	3 -9 32 25							
CRL 989	6 38 25	7 -9 32 18							
AFGL 989	6 38 26	-9 32 18							
CRL 989	6 38 26	-9 32 18							
AFGL 989	6 38 27	-9 25							
LHA 61	6 38 28	-9 29 07							
NGC 2264 C	6 38 34	-9 27 42							
NGC 2264 W215	6 38 46	-9 52							
NGC 2264 W222	6 38 50	-9 54							







ORIGINAL FACTS  
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AFGL 1272S	8 34 39	-19 49 30	11 0	-0 9M	10M 770706
CRL 1274	8 35 44 6	-10 13 41	5 0	-2 3M	10M 780604
AFGL 1274	8 35 52	-10 16 42	6 4	0 2C	185 781210
CRL 1274			11 0	-1 4M	18M 780913
RZ CMC	9 38 02 7	+31 58 21	12 5	-0 8C	185 781210
AFGL 1281	8 37 30	-17 06 36	18 0	3 3M	CS1
AFGL 4705S	8 37 35	-12 18 42	11 0	2 4MU	
AK HYA	8 37 36	-17 07 23	19 8	-2 5M	10M 780913
AFGL 4708S	8 37 38	+46 02 48	20 8	-2 46M	95 731104
AFGL 1283	8 39 06	-2 21 42	11 0	-1 0M	10M 770706
CRL 1283	8 39 12	-2 22 48	11 0	-1 5M	10M 780913
AFGL 4708S	8 39 45	-2 51 42	19 8	-2 8M	10M 770706
IC 2352	8 41 40	-18 28	5 0	3 8M	10M 770706
AFGL 1285	8 41 50 7	+18 20 22	10 2	5 69M	IC
AFGL 4711S	8 42 26	-72 34 06	12 5	1 31M	175 790401
AFGL 1286S	8 43 29	-79 09 54	11 0	-1 46M	175
AFGL 1288	8 43 44	-1 49 24	11 0	1 47M	10M 770706
AFGL 4712S	8 43 53	-13 20 42	12 5	-0 7M	10M 780913
A30	8 44 00	-18 04	8 6	-0 51M	175 790401
AFGL 1289	8 44 07 8	-6 38 12	12 5	-1 22M	175
AFGL 1294S	8 46 40	+73 18 30	11 2	1 31M	175
AFGL 4718S	8 48 23	-63 54 12	19 8	-0 7M	10M 770706
MGC 2693	8 49 39	-33 37 30	10 8	-3 4M	10M
AFGL 1297S	8 51 21	-12 51 30	19 8	-2 9M	10M 770706
MARK 391	8 51 32 3	-39 43 40	10 8	0 060U	5 75 780305
OJ 207	8 51 57	+20 17 59	1570	3 2M	10M 770706
AFGL 1298	8 52 33	+17 25 24	11 0	0 36J	1M 781201
X CMC	8 52 34 0	-17 25 22	8 4	0 56J	1M 720701
AFGL 1298	8 51 56	-20 14	11 0	0 92J	
AFGL 1298	8 51 56	-20 14	10 5	0 55J	RA42
AFGL 1298	8 51 56	-20 14	10 5	-0 7KV	740904
AFGL 1298	8 51 56	-20 14	10 5	0 083J	771203
AFGL 1298	8 51 56	-20 14	1000	0 8J	55 780210
AFGL 1298	8 51 56	-20 14	1670	5 0J	1M 781201
AFGL 1298	8 52 33	+17 25 24	11 0	-0 7M	10M 780913
X CMC	8 52 34 0	-17 25 22	8 4	-0 87M	175 790401
AFGL 1298	8 52 34 0	-17 25 22	8 4	4 71F	710203
AFGL 1298	8 52 34 0	-17 25 22	8 4	4 71F	781005
AFGL 1298	8 52 34 0	-17 25 22	10 8	-0 8M	721103
AFGL 1298	8 52 34 0	-17 25 22	11 0	2 25F	781005
AFGL 1298	8 52 34 0	-17 25 22	11 0	-0 92C	710203
AFGL 1298	8 52 34 0	-17 25 22	11 0	-2 01F	781005
AFGL 1298	8 52 34 0	-17 25 22	11 2	-0 87M	175 780401
X CMC	8 52 34 0	-17 25 22	12 2	-0 8M	721103
AFGL 1298	8 52 34 0	-17 25 22	12 5	1 38F	175 780401
AFGL 4718S	8 52 41	-23 00 30	19 8	-0 83M	10M 770706









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AFGL 1424	10 50 47	- 7 12 54	11 0	10 40 10	10M	739901
MARK 34	10 34 17	- 52 2	- 60 17 20	10 6	6S	720501
AFGL 47865	10 71 17	- 68 44 18	19 8	1570	10M	781201
AFGL 47885	10 32 47	- 48 38 54	11 0		10M	770708
AFGL 47895	10 33 32	- 63 20 54	19 8		10M	
CP-57 3502	10 33 48 9	- 57 59 10	8 6		10M	
	10 34 31	- 3 47 38	12 2			720202
AFGL 1426	10 35 05 0	- 13 07 25	19 8		10M	760913
U HYA			8 4			710203
			8 4			751005
			11 0			7 0203
			11 0			7 0203
			20 0			7 0203
			20 0			741002
			20 0			761005
			11 0		10M	760913
AFGL 1427	10 35 08	- 13 06 06	19 8		10M	
AFGL 1428	10 35 15	- 11 46 48	11 0		10M	
AFGL 4110	10 35 22	- 58 20 30	19 8		10M	
AFGL 4111	10 35 55	- 58 30 18	27 4		10M	
AFGL 14295	10 37 07	- 72 54 12	19 8		10M	770708
AFGL 14305	10 37 12	- 22 03 42	19 8		10M	
HFE 15	10 37 12	- 56 51	100		20000J	711201
AFGL 4112	10 38 31	- 59 09 42	11 0		10M	760913
AFGL 1431	10 39 41	- 69 21 00	11 0		10M	
R UMA	10 41 07 9	- 89 02 19	6 3		90J	790402
THE CAR	10 41 10 1	- 64 07 55	10 7		1 6MU	741002
AFGL 1432	10 41 12	- 69 03 54	11 0		1 3M	730303
CARINA I	10 41 27	- 59 19 00	35		40S	760913
VY UMA	10 41 37 2	- 67 40 26	80		600J	40S
			5 0		0 29M	700302
			8 4		0 18C	710203
			8 4		0 18C	710405
			10 2		4 13F	761005
			10 2		1 21M	700302
			11 0		0 33C	710203
			11 0		0 35C	710405
			11 0		1 76F	761005
AFGL 1433	10 41 45	- 67 41 48	11 0		10M	760913
UMA #1	10 42	- 48 15	22		700X	3D 681203
AFGL 1434	10 42 28	- 6 35 12	11 0		0 5M	10M 760913
AFGL 4113	10 42 29	- 59 50 12	19 8		4 8M	10M
CD-58 3538	10 42 44 7	- 59 06 46	8 6		0 60M	
			10 7		1 50M	
			12 2		1 42M	
			18 2		2 3M	
AFGL 14355	10 42 45	- 52 30 54	11 0		0 8M	10M 770708
CARINA II	10 42 57	- 59 23 00	35		2 6M	40S 790105
HD 93281	10 43 01 1	- 59 40 19	80		160J	720202
ETA CAR	10 43 06 8	- 59 25 15	10 7		1 0MU	
			8 7		2 0MU	
			8 8		3 2S	6S 750707
			8 1		3 2S	780802
			8 1		7 32S	
			8 1		6 05M	
			8 1		6 15M	
			8 1		6 23M	
			8 4		3 4E51	
			8 4		6 45MV	1 1S 791011
			8 6		5 77M	16S 730007
			9 6		6 97M	7 2S 780802
			9 6		7 32M	
			9 6		7 47M	14S
			9 6		7 52M	19S
			10 2		4 7E51	1 1S 791011
			10 2		7 87MV	16S 730007
			11 2		4 1E51	1 1S 791011
			12 2		8 40MV	16S 730007
			12 2		6 51M	3 2S 780802
			12 2		7 82M	7 2S
			12 2		8 44M	10S
			12 2		8 46M	14S

ORIGINAL  
OF POOR QUALITY

NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS	REF	NAME	RA (1950)	DEC	WAVE	FLUX	BEAM	BIBLIO	POS	REF
AFGL 1439	10 49 11	-21 00 50	11 0	-4.5M	10M	760913			AFGL 4128	11 15 16	-65 34 42	11 0	-2.7M	10M	760913		
AFGL 1441	10 50 59	+13 58 54	11 2	-0.36M	17S	790401			AFGL 48075	11 15 43	-39 37 36	11 0	2.00X	3D	681203		
			11 0	-0.9M	10M	780913			UMA #3	11 16	-43 01	22	2.00X	10M	770706		
UMA #2	10 50 59	+14 00 06	11 0	-0.2M	10M	760913			AFGL 48085	11 14 13	+10 03 54	11 0	-0.7M	10M	760913		
AFGL 1443	10 52 01	+72 06 42	11 0	-0.2M	10M	760913			AFGL 4127	11 14 27	-81 12 36	19 8	-3.5M	10M	760913		
HD 94599	10 52 04	-60 49 55	10 7	-1.18M					75 LED	11 14 43.0	+2 17 08	8 4	1.23M				
			12 2	-1.18M								8 4	1.01M				
IRC*70102	10 52 06	+72 08 30	10 2	-1.59R					AFGL 4128	11 15 16	-65 34 42	11 0	1.01M				
AFGL 14455	10 52 39	+22 25 00	10 6	-3.2M	10M	760913			AFGL 48075	11 15 43	-39 37 36	11 0	-2.2M	10M	770706		
AFGL 1446	10 53 18	+6 25 30	11 0	-1.40M	10M	760913			UMA #3	11 16	-43 01	22	2.00X	3D	681203		
			8 4	-1.00M	17S	790401			AFGL 48085	11 16 10	-61 09 06	11 0	-1.4M	10M	770706		
			11 2	-1.16M	17S	790401			AFGL 48095	11 16 15	-46 05 18	11 0	-1.5M	10M	760913		
			12 5	-1.19M	17S	790401			AFGL 48095	11 16 15	-46 05 18	11 0	-3.4M	10M	760913		
VY LED	10 53 25.8	+6 27 09	8 4	-0.90M					NGC 3623	11 16 18	+13 22	19 8	0.045JU	5.7S	780305		
			8 4	-0.90M					AFGL 48105	11 17 27	+12 23 12	19 8	-3.2M	10M	770706		
			11 0	-1.24M					NGC 3627	11 17 36	-13 16	10	0.11J	5.7S	780305		
			11 0	-1.24M					AFGL 41785	11 18 32	+4 33 42	11 0	-0.15J	6S	720901		
			20	-1.5M	14S	760913			AFGL 4130	11 19 04	-55 30 30	11 0	-0.9M	10M	770706		
AFGL 14475	10 53 33	+74 24 38	11 0	-1.5M	10M	770706			HD 98817	11 19 23.8	-60 42 24	19 8	-2.7M	10M	760913		
AFGL 4118	10 53 50	-60 09 38	11 0	-3.7M	10M	760913						10 7	1.6M				
GG CAR	10 53 58.0	-60 07 30	10	1.46M	9S	790804			AFGL 1481	11 20 29	-24 24 18	12 2	-1.1M	10M	760913		
			15 8	-3.7M	10M	760913			IRC*20128	11 21 03	+17 07 12	19 8	-2.7M	10M	760913		
			11 0	-1.5M	14S	760913			AFGL 1482	11 21 27	-19 36 30	11 0	-3.7M	10M	770706		
			11 0	-1.7M	10M	760913			AFGL 1485	11 22 17	-48 07 06	19 8	-0.3M	10M	760913		
			15 8	-3.7M	10M	760913			AFGL 1487	11 23 20	+9 30 30	19 8	-3.8M	10M	760913		
			10	1.46M	9S	790804			NGC 3675	11 23 26	+43 52	10	1.0JV	6S	720901		
			11 0	-1.5M	14S	760913						10	0.28J	7S	700904		
			11 0	-3.7M	10M	760913						22	0.26J	7S	700904		
			10	1.46M	9S	790804			AFGL 48165	11 24 22	+13 09 06	11 0	-0.6M	10M	770706		















ORIGINAL PRICES  
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AL VIR	14 08 26.8 -13 04 32	10 0	5.34RU	-	741008	CS1	
CRL 1888	14 08 38 -7 33 54	8 4	3 7MU		115 700906	AFGL	
AFGL 1888	-	11 2	0 3C		185 761210	AFGL	
CRL 1888	-	11 2	-1 5M		10M 760913	AFGL	
AFGL 1888	-	12 5	-0 8C		185 781210	AFGL	
CRL 1888	-	12 5	-0 1M		10M 760913	AFGL	
AFGL 1888	-	12 5	-0 1M		10M 760913	AFGL	
CRL 1888	14 08 39 0 -7 30 44	10 6	50J		125 780106	AFGL	
AFGL 1888	14 08 40 0 -7 30 32	11 0	55J		125 780804	AFGL	
CRL 1888	-	10 6	50J		-	-	-
AFGL 1888	-	10 6	50J		-	-	-
CRL 1888	-	10 6	63J		-	-	-
AFGL 1888	-	10 6	75J		-	-	-
CRL 1888	-	11 6	62J		-	-	-
AFGL 1888	-	12 6	50J		-	-	-
CRL 1888	14 10 37 -29 40 30	5 0	-15 2RV		740401	TRC	
AFGL 1888	14 12 22 -12 43 42	10 2	-13 9RV		10M 770706	AFGL	
CRL 1888	14 12 22 -12 43 42	8 6	-1 5M		741203	AFGL	
AFGL 1888	14 12 22 -12 43 42	8 6	-2 05M		95 790804	AFGL	
CRL 1888	-	10 7	-2 5M		741203	AFGL	
AFGL 1888	-	12 2	-2 7M		741203	AFGL	
CRL 1888	-	18	-3 6M		95 790804	AFGL	
AFGL 1888	14 13 02 -59 41 12	11 0	-2 05M		10M 760913	AFGL	
CRL 1888	14 13 20 -19 25 30	11 0	-3 8M		10M 760913	AFGL	
AFGL 1888	14 13 20 -19 25 30	11 0	-3 3M		10M 760913	AFGL	
CRL 1888	14 13 22 8 -19 26 31	5	-3 5M		10M 760913	AFGL	
AFGL 1888	-	5	2400J		751103	CS1	
CRL 1888	-	5	-2 96C		770702	AFGL	
AFGL 1888	-	5	-3 12M		840501	AFGL	
CRL 1888	-	5	-3 12M		700302	AFGL	
AFGL 1888	-	7	1360J		770702	AFGL	
CRL 1888	-	8 4	-3 32C		115 700906	AFGL	
AFGL 1888	-	8 4	-3 32C		710203	AFGL	
CRL 1888	-	8 4	-3 19M		730002	AFGL	
AFGL 1888	-	8 5	-3 2M		700907	AFGL	
CRL 1888	-	8 5	-3 19M		721103	AFGL	
AFGL 1888	-	8 6	-3 2M		721203	AFGL	
CRL 1888	-	8 6	-3 2M		741009	AFGL	
AFGL 1888	-	8 7	-3 20M		115 740807	AFGL	
CRL 1888	-	8 7	-3 16M		115 741202	AFGL	
AFGL 1888	-	8 7	-3 16M		741008	AFGL	
CRL 1888	-	8 7	-3 16M		741105	AFGL	
AFGL 1888	-	10	14 76FV		V 860501	AFGL	
CRL 1888	-	10	-3 15M		115 740807	AFGL	
AFGL 1888	-	10	-3 15M		115 741110	AFGL	
CRL 1888	-	10	-3 15M		115 741202	AFGL	
AFGL 1888	-	10	-3 25M		710805	AFGL	
CRL 1888	-	10	-3 25M		720803	AFGL	
AFGL 1888	-	10	-3 15M		741008	AFGL	
CRL 1888	-	10	-3 30M		741009	AFGL	
AFGL 1888	-	10	-3 20M		741107	AFGL	
CRL 1888	-	10	667J		770702	AFGL	
AFGL 1888	-	10	-4 54M		790605	AFGL	
CRL 1888	-	10	-2 15M		741105	AFGL	
AFGL 1888	-	10	-2 05M		661101	AFGL	
CRL 1888	-	10	-3 28M		700302	AFGL	
AFGL 1888	-	10	-3 07M		840501	AFGL	
CRL 1888	-	10	-2 76C		721102	AFGL	
AFGL 1888	-	10	-3 27M		721203	AFGL	
CRL 1888	-	10	-3 3M		741009	AFGL	
AFGL 1888	-	10	-3 25M		741009	AFGL	
CRL 1888	-	11	16 3F		225 730106	AFGL	
AFGL 1888	-	11	-3 27M		710403	AFGL	
CRL 1888	-	11	-3 37M		115 700906	AFGL	
AFGL 1888	-	11	-3 24C		710203	AFGL	
CRL 1888	-	11	-3 12M		730002	AFGL	
AFGL 1888	-	11	-3 3M		721203	AFGL	
CRL 1888	-	11	-3 27M		741009	AFGL	
AFGL 1888	-	11	-3 21M		115 740807	AFGL	
CRL 1888	-	11	-3 21M		115 741202	AFGL	
AFGL 1888	-	11	-3 3M		700907	AFGL	
CRL 1888	-	11	-3 21M		741008	AFGL	
AFGL 1888	-	11	-3 21M		741105	AFGL	
CRL 1888	-	12	-3 22M		721103	AFGL	
AFGL 1888	-	12	-3 23M		115 740807	AFGL	
CRL 1888	-	12	-3 23M		115 741202	AFGL	
AFGL 1888	-	12	-3 23M		741008	AFGL	
CRL 1888	-	12	-3 23M		741105	AFGL	
AFGL 1888	-	12	-3 3M		721203	AFGL	





















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Code	Product	QTY	Unit	Price	Amount	Code	Product	QTY	Unit	Price	Amount
SCR A WEST(13)	17 42 29 8	-28 59 18				4.4M	OX	15M	770612		
SCR A WEST(C)	17 42 29 8	-28 59 19				15M	34M	15M	740908		
GAL CEN IRS1	17 42 29 8	-28 59 19				81000J	5M	1 2ESJ			
						1 0ESJ	5M	1 0ESJ			
						212	91000J	5M			
						257	72000J	5M			
						43000J	4 5M	730102			
						1 4M	770804	ED			
						55S	780210				
						1M	781201				
							760801				
							12M	710208			
						6 4ESJ	15M	800803			
						1 0ESJ	15M	800803			
						6 3ESJ	15M	800803			
						180	30M				
						180	6 4ESJ	12M	711201		
						100	1 9M	12M	741009		
						10 8	1 8M				
						10 8	1 5M				
						11 3	1 4M				
						18	-0 7M				
						10	4 4M				
						100	2 3ESJ	11S	710208		
						19 8	2 6M	12M	760913		
						27 4	-3 4M	10M			
						11 0	-1 0M	10M			
						19 8	-3 4M	10M			
						100	2 3ESJ	12M	711201		
						11 0	-1 3M	10M	760913		
						19 8	-3 7M	10M			
						11 0	-1 1M	10M	770706		
						11 0	-1 6M	10M	760913		
						19 8	-4 2M	10M			
						10	4 5MJ	11S	741009		
						11 0	-0 9M	10M	760913		
						27 4	-1 1M	14S	760901		
						27 4	-6 3M	10M	760913		
						5 8	28J	5 8	780604		
						8 8	65J	8 8			
						10 8	130J	10 8			
						10 8	130J	10 8			
						12 6	110J	12 6			
						11 0	-1 7M	10M	760913		
						19 8	-3 0M	10M			
						100	4 8MV	15M	770612		
						200	2M	15M	770612		
						100	67000J	12M	711201		
						19 8	-3 2M	10M	760913		
						19 8	-0 7M	10M	770706		
						19 8	-3 6M	10M			
						8 4	-0 9C	10M			
						10 1	-1 10C				
						11 2	-2 1C				
						12 5	-1 9C				
						8 6	-0 9M				
						10 7	-2 4M				
						12 7	-2 1M				
						18	-2 8M				
						20	-3 0M				
						11 0	-2 2M	14S	760901		
						8 7	-2 18M	10M	760913		
						8 7	1 47MV	4S	800507		
						8 7	0 9MV	5S			
						8 7	0 66M	27S			
						10	1 62M	4S	800507		
						10	1 71MV	5S			
						10	0 5MV	27S			
						10 0	0 58M				
						11 4	1 05MV	5S	800507		
						11 4	0 25M	5S	780615		
						12 6	2 55M	4S	800507		
						12 6	0 82MV	5S			
						12 6	0 4MV	27S			

















ORIGINAL PACKAGES  
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Part No.	Description	QTY	Unit	Material	Weight	Volume	Value	Notes
AFGL 2222		18 37 31		10M 760913	11 0	0 23 36		
AFGL 2223		18 37 32		10M 760913	11 0	5 45 30		
IRC-10450		18 37 35		10M 760913	8 4	5 45 42		
K3-10		18 37 48		10M 760913	11 2			
AFGL 2225		18 38 03		10M 760913	12 5	14 09		
AFGL 2226		18 38 18		10M 760913	11 0	5 42 36		
AFGL 2227		18 38 36		10M 760913	11 0	6 24 18		
IRC-00363		18 38 48		10M 760913	19 8	4 24 12		
AFGL 2229		18 39 28		10M 760913	8 4	4 23 30		
IRC-00364		18 39 32		10M 760913	11 2			
IRC-20370		18 39 41		10M 760913	12 5			
AFGL 2232		18 39 42		10M 760913	8 4	17 38 42		
IRC-00365		18 39 51		10M 760913	8 4	2 21 12		
AFGL 2234		18 39 53		10M 760913	12 5			
AFGL 2235		18 40 04		10M 760913	19 8	2 07 42		
AFGL 2236		18 40 07		10M 760913	11 0	2 21 08		
AFGL 2237		18 40 10		10M 760913	19 8	28 55 24		
AFGL 2238		18 40 13		10M 760913	11 0	19 20 18		
AFGL 2239		18 40 16		10M 760913	19 8	10 18 12		
AFGL 2240		18 40 19		10M 760913	10 7	13 58 00		
AFGL 2241		18 40 22		10M 760913	13 8	3 38 18		
AFGL 2242		18 40 25		10M 760913	11 0	12 21 42		
AFGL 2243		18 40 28		10M 760913	11 0	1 35 24		
AFGL 2244		18 40 31		10M 760913	11 0	38 55 06		
AFGL 2245		18 40 34		10M 760913	11 0	13 53 06		
FIR #23		18 41 15		10M 760913	18 8			
IRC-10374		18 41 17		10M 760913	8 4	11 54 30		
MV SGR		18 41 33		10M 760913	8 4			
IRC 00370		18 41 42		10M 760913	10 7	21 00 24		
AFGL 2243		18 41 42		10M 760913	5	3 51 08		
IRC 00371		18 41 43		10M 760913	11 0	4 23 18		
AFGL 2242		18 41 44		10M 760913	19 8	2 36 30		
AS 320		18 41 50		10M 760913	11 0	32 38 24		
AFGL 5286		18 42 02		10M 760913	8 7	3 51		
AFGL 5287		18 42 02		10M 760913	11 4	11 14 00		
AFGL 5288		18 42 03		10M 760913	11 0	17 27 12		
AFGL 5289		18 42 04		10M 760913	10 7	33 24 12		
AFGL 5290		18 42 05		10M 760913	11 0	17 20 42		
AFGL 5291		18 42 06		10M 760913	19 8	4 10 12		
AFGL 5292		18 42 07		10M 760913	8 7	19 38 36		
AFGL 5293		18 42 08		10M 760913	10 7	37 53 05		
AFGL 5294		18 42 09		10M 760913	10 7	4 04 08		
AFGL 5295		18 42 10		10M 760913	11 0	1 50 00		
AFGL 5296		18 42 11		10M 760913	100	2 49		
AFGL 5297		18 42 12		10M 760913	100	2 45		
AFGL 5298		18 42 13		10M 760913	180	3 25 51		
AFGL 5299		18 42 14		10M 760913	10 7	1 43 36		
AFGL 5300		18 42 15		10M 760913	19 8	2 42 36		



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Code	Time	Lat	Long	Alt	Wind	Temp	Humid	Cloud	Vis	Pressure	Remarks
CRA H-H	18 58 28.3	-37 02 27	5 0	3 0M	355 740103						
H-H 100			8 4	1 5M	355						
CRA H-H			11 2	0 50M	365 760503						
H-H 100	18 58 31 5	-37 01 22	12 8	0 2M	355 740103						
R CRA			11 1	-0 13M	365 760503						
DG CRA	18 58 32	-37 27 54	12 6	-1 48M	365						
T CRA	18 58 37	-37 02 18	22	4 0MU	730203						
			5 0	4 89M	700302						
			10 2	2 04M	355 760503						
			11 1	1 62M	700302						
			12 6	-1 3M	365 760503						
FIR #28	18 58 56	+ 4 07	18 0	1 65E	30M 800803						
IR35 2-1 7	18 59 13.6	+ 1 09 01	8 7	8J	95 790114						
			10 1	17J	95						
			11 2	17J	95						
			12 5	38J	95						
AFGL 2303	18 59 14	+ 4 07 42	19 8	-3 8M	10M 760913						
W48	18 59 14.2	+ 1 08 41	27 4	-6 3M	10M 770104						
AFGL 2304	18 59 21	+ 1 07 42	33	2 5F	135						
SH2-71	18 59 29	+ 5 07 36	19 8	-4 9M	10M 760913						
	18 59 30	+ 2 05	10	3 5MU	11S 741009						
			11	2 1J	11S 720301						
			11	3 0M	11S 741009						
			18	2 1J	720301						
S 71	18 59 31	+ 2 05 11	11 6	0 6MU	11S 741009						
VV CRA	18 59 45	-37 17 01	10 7	0 7M	45 710102	599901					
IRC 00407	18 59 50	+ 1 26 06	10 7	0 4MU	740705						
AFGL 4242	18 59 57	+ 4 57 06	19 8	-3 2J	10M 760913						
NCC 6741	19 00 01	- 0 31	9 0	3 6M	11S 790409						
			10 5	100G	10S 800409						
			12 8	3 0J	11S 790409						
IRC 00408	19 00 04	+ 1 15 00	18 6	0 75M	11S 741009						
AFGL 2306S	19 00 09	+ 22 45 30	10 7	0 4M	10M 770706						
AFGL 2309	19 00 17	+ 25 15 54	19 8	-2 3M	10M 760913						
AFGL 2310	19 00 41	+ 22 45 30	11 0	-1 4M	10M 760913						
IRC+10401	19 00 45	+ 7 24 36	19 8	-3 1M	10M						
			27 4	-6 3M	10M						
AFGL 2313S	19 01 10	+ 5 26 48	12 5	-3 0CV	780610						
IRC+10402	19 01 11	+ 8 17 36	10 7	1 1MU	10M 770706						
AFGL 4243	19 01 13	+ 57 46 18	19 8	-2 9M	10M 760913						
AFGL 5332S	19 01 22	+ 25 06 18	11 0	-1 3M	10M 770706						
K4-12	19 01 30	+ 16 22 24	10	-3 3M	10M						
AFGL 2314	19 01 39	- 5 46 24	11 0	-1 5MU	10M 760913						
V AQL	19 01 43.9	- 5 45 38	8 6	-1 24C	710203						
			10 8	-1 6M	721103						
			11 0	-1 48C	710203						
			12 2	-1 7M	721103						
IRC+60262	19 02 11	+ 63 01 42	20	-1 6M	14S 760901						
AFGL 5338S	19 02 52	+ 31 39 06	10 7	0 4MU	10M 770706						
AFGL 2316	19 02 53	+ 8 09 48	19 8	-3 1M	10M 760913						
CRL 2318	19 03 00	+ 8 08 20	11 0	-1 6M	10M 760913						
AFGL 2318	19 03 04	+ 20 17 18	11 0	-1 5M	10M 760913						





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Code	Date	Time	Lat	Long	Alt	Wind	Temp	Humid	Press	Cloud	Vis	Wind Dir	Wind Spd	Wave Dir	Wave Hgt	Ice	Remarks	Station	Agency	Priority	Remarks
AFGL 2418	19 31 28	19 31 28	-16 28 48															10M 780913	RNGC		
AFGL 5395S	19 31 37	19 31 37	-45 21 48															10M 770708			
NGC 6807	19 32 04	19 32 04	-5 34															11S 741909			
IRC-30374	19 32 12	19 32 12	-27 57 00															11S 780610	IRC		
AFGL 2417	19 32 12	19 32 12	-27 57 54															10M 760913			
AFGL 5398S	19 32 34	19 32 34	-23 44 48															10M 770708			
HFE 81	19 32 41	19 32 41	-21 58															12M 711201			
AFGL 5399S	19 32 43	19 32 43	-30 40 18															10M 770708			
AFGL 4251	19 32 45	19 32 45	-30 23 00															10M 780913			
BD-30 3639	19 32 47 5	19 32 47 5	-30 24 21															10M 730706	CSI		
AFGL 5400S	19 32 54	19 32 54	-0 38 18															10M 770708			
AFGL 2419S	19 33 09	19 33 09	-72 49 24															10M 770708			
AFGL 5405S	19 33 26	19 33 26	-47 41 12															10M 770708			
IRC-20418	19 34 13	19 34 13	-23 31 36															10M 770708			
M1-92	19 34 18	19 34 18	-29 28															14S 760901	IRC		
8335 0 2M W	19 34 23	19 34 23	-7 27 30															13M 800806	ED		
8335	19 34 35	19 34 35	-7 27 30															17M 800806			
BARNARD 335	19 34 38	19 34 38	-21 36 36															17M 800806			
AFGL 5407S	19 34 48	19 34 48	-25 13 12															10M 770708			
IRC-30377	19 34 50	19 34 50	-21 38 54															10M 770708			
IRC-20419	19 35 05	19 35 05	-7 27 30															10M 770708			
8335 0 5M E	19 35 09	19 35 09	-20 28 18															10M 770708			
AFGL 5408S	19 35 28 7	19 35 28 7	-50 05 12															10M 770708	CSI		
R C/C	19 35 28 7	19 35 28 7	-50 05 12															10M 770708			
AFGL 2422	19 35 37	19 35 37	-50 05 36															10M 750913			

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Table with columns: NAME, RA (1950), DEC, WAVE, FLUX, BEAM BIBLIO POS REF, NAME, RA (1950), DEC, WAVE, FLUX, BEAM BIBLIO POS REF.



















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OF POOR QUALITY

Item	QTY	UNIT	PRICE	TOTAL	DESCRIPTION	DATE	STATUS	REMARKS
AFGL 4278	21	30	16		AFGL 4278		IC	
IC 5117	21	30	37		IC 5117			
	21	30	55		*M2 #11			
	21	31	08		HU1-2			
	21	31	06		HU1-2			
	21	31	15		AFGL 2778			
	21	31	32		AFGL 5825S			
	21	32	03		A.G. 2781			
	21	32	05		IR. 2485			
	21	32	06		C11 13			
	21	32	14		AFGL 2782			
	21	32	19		AFGL 5825S			
	21	33	24		ABELL 78			
	21	33	29		AFGL 5827S			
	21	33	42		K4-45			
	21	34	08		IRC-30475			
	21	35	02		PKS 2135-14			
	21	35	02		AFGL 5629S			
	21	35	45		LKHA 349			
	21	35	52		S CEP			
	21	36	15		AFGL 4279			
	21	36	21		AFGL 2785			
	21	37	24		AFGL 4280			
	21	37	40		AFGL 2787			
	21	37	41		AFGL 4281			
	21	37	57		AFGL 4282			
	21	38	05		AFGL 5834S			
	21	38	10		CRL 2789			
	21	38	12		AFGL 2789			
	21	38	19		V644 CYG			
	21	38	23		AFGL 2789			
	21	38	23		AFGL 2789			
	21	38	23		AFGL 2789			
	21	38	23		AFGL 2789			
	21	38	23		AFGL 2789			















ORIGINAL DATE IN  
OF POOR QUALITY

~~DATE~~ END

12/29/82

NAME RA (1950) DEC WAVE FLUX BEAM BIBLIO POS REF

NAME	RA (1950)	DEC	WAVE	FLUX	BEAM BIBLIO POS REF
RHD CAS	23 51 52.4	+57 13 16	10 0	4.12M	741105
			11 4	4.35M	780704
			8 4	-25.1L	701003 CSI
			8 7	1.63M	741105
			10 0	1.62M	701003
			11 0	-25.2L	741105
			11 4	1.76M	
			12 6	1.77M	
AFGL 3176	23 52 48	+48 21 54	11 0	-1.4M	10M 770913
M2-36	23 54 06	+70 32	8 8	-0.4M	4S 741009 P-K
			10	-0.75M	4S
			11 3	-0.7M	4S
			18	-2.15M	4S
AFGL 5796S	23 54 09	+26 04 36	11 0	-2.0M	10M 770706
AFGL 3191	23 54 16	+70 30 48	11 0	-1.2M	10M 780913
AFGL 3186	23 55 11	+24 51 00	11 0	-0.5M	10M 780913
NGC 7793	23 55 19	-32 51	10 0	0.064JU	5.7S 780305 RNGC
AFGL 3187	23 55 37	+56 12 24	10 6	4.8M	17S 740701
R CAS	23 55 51.7	+51 06 36	11 0	-0.8M	10M 780913
			5 0	-13.6RV	740401 CSI
			8 4	-3.06C	710203
			8 4	-3.55CV	750104
			10 1	-4.6C	721001
			11 0	-14.3RV	740401
			11	-4.08M	710403
			11 0	-4.49CV	750104
			18	-4.10C	710203
			20	-5.19M	S
			20	6.8F	9S 731104
			11 0	-4.2M	30S 791015
AFGL 3188	23 55 59	+51 05 54	19 8	-4.8M	10M 760913
LKHA 259	23 58 10	+66 09 30	18	4.9M	11S 741108 729902
AFGL 3189	23 56 11	-39 42 54	11 0	-2.7M	10M 780913
			19 8	-3.9M	10M 780913
MACC H5	23 58 48	+66 08 30	10	5.26M	781203 729902
WU 2357-04.8	23 57	+4 48	280	1.2E7X	1D 741104 ED
AFGL 3193	23 57 17	+67 04 24	11 0	-0.8M	10M 780913
			11 0	-1.7M	10M
AFGL 4304	23 57 18	-51 17 12	19 8	-2.9M	10M
Z PEG	23 57 32.8	+25 37 42	5 0	-15.0R	740401 CSI
			10 2	-15.8R	10M 760913
AFGL 3194	23 57 35	+25 35 54	11 0	-0.3M	10M
			19 8	-3.4M	10M
AFGL 3196	23 58 30	+60 04 12	11 0	-0.9M	10M 780913
WZ CAS	23 58 41.9	+60 04 37	8 4	0.00M	17S 790401
			8 4	0.23C	710203 CSI
			8 4	2.35F	761005
			11 0	-0.04C	710203
			11 2	1.08F	781005
			11 2	-0.16M	17S 790401
			12 5	-0.03M	17S 790401
WOLF-LN/A235923	59	-15	1870	7.0JU	1M 781201
AFGL 5800S	23 59 03	-51 40 18	11 0	-1.8M	10M 770706
AFGL 4305	23 59 15	+67 07 18	11 0	-1.0M	10M 780913
			19 8	-3.3M	10M
30 PSC	23 59 23.8	- 6 17 31	10 2	-0.40C	670801
			11 0	-0.36M	700302
AFGL 3197	23 59 28	- 6 16 24	1570	-1.0M	10M 780913
B-382			10	5.22JU	1M 781201
HV 11417			10	2.9M	801104
K4-49			18	1.9MU	740708
K4-57			10	4.9M	
SGR C			100	80M	15M 770612
SGR D			200	20W	15M
SGR E			200	24W	15M
			200	11W	15M
			200	25W	15M
			200	9W	15M
SIMEIS 130			10	4.4MU	740708
STRAND 58			10.7	0.4MU	730303
VI CYG #1245			11 0	-1.7MU	
VI CYG #1359			11 0	2.9MU	11S 730004
VI CYG NO. 103			11 0	3.1MU	11S
VI CYG NO. 029			11 0	3.1MU	11S