



*International
Virtual
Observatory
Alliance*

The UCD1+ controlled vocabulary Version 1.0

IVOA Working Draft 2005-04-29

This version:

<http://www.ivoa.net/internal/IVOA/IvoaUCD/WD-UCDlist-20050429.html>

Latest version:

<http://www.ivoa.net/Documents/latest/UCDlist.html>

Previous versions:

<http://www.ivoa.net/internal/IVOA/IvoaUCD/WD-UCDlist-20040823.html>

Editor(s):

S. Derriere, A. Preite Martinez

Authors:

Andrea Preite Martinez (andrea@rm.iasf.cnr.it)
Sébastien Derriere (derriere@astro.u-strasbg.fr)

Abstract

This document describes the list of controlled terms used to build the Unified Content Descriptors, Version 1+ (UCD1+).

The document describing the current proposal for a new set of UCD called UCD1+ can be found at the url: <http://www.ivoa.net/Documents/latest/UCD.html>. Here we briefly recall the structure of the proposed UCD1+ and the origin of the present lists.

Status of this document

This is an IVOA Working Draft for review by IVOA members and other interested parties. It is a draft document and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use IVOA Working Drafts as reference materials or to cite them as other than “work in progress”. A list of current IVOA Recommendations and other technical documents can be found at <http://www.ivoa.net/Documents/>.

Acknowledgments

This document is based on the W3C documentation standards, but has been adapted for the IVOA.

1 Definition of atoms and words

A UCD is a string which contains textual tokens called “words”, separated by semicolons(;). A word is composed of “atoms”, separated by periods(.). So the hierarchy is the following:

atoms \longrightarrow words \longrightarrow composed words

UCD1+ are either single words, or a composition of several words.

UCDs should be “controlled” (through a process that is also indicated in the reference document above). Control should be exercised at the level of words (ucd1+) but also at the level of the vocabulary (atoms) used to form words. A consistent list of atoms should be maintained, making sure that the same atom means always the same thing, even if used in combination with different other atoms.

1.1 Definition of atoms

Atoms were defined following these guidelines:

1. abbreviations are kept to a minimum, and only if the result is not ambiguous (**ra**, **dec** are OK, but **t** is ambiguous: we use **time** and **temperature** instead).
2. atoms are not hyphenated. The separation is marked by a capital letter to help readability (position angle = **posAng**) unless the composed word has a well known acronym (signal to noise ratio = **snr**) or short form (standard deviation = **stdev**)

1.2 Definition of words

The list of UCD1+ words presented in this document was initially generated applying the rules and recommendations of PR-UCD-20040823 to catalogues/tables in Vizier. The original motivation was to transform old UCD1 into an improved version, trying to build a list of combinations of new words that could describe all the existing UCD1 terms.

The present list of words also takes into account suggestions and contributions from the community, expressed mainly in the ucd_comments pages maintained at CDS: <http://vizier.u-strasbg.fr/UCD/cgi-bin/comment/ucdComments>

2 The structure of the UCD1+ tree

All existing UCD1+ words are grouped into 12 main categories. These categories are expressed by the first atom of the word, whose possible values are:

1. **arith** (arithmetics)

We include in this section concepts involving or indicating some mathematical operation performed on the primary “concept” or just the presence of an arithmetic factor or operator.

2. **em** (electromagnetic spectrum)
 This section describes the electromagnetic spectrum, either in a monochromatic way or in predefined intervals. The complete list of proposed bands (in seven classical regions of the e.m. spectrum: radio, millimeter, infrared, optical, ultraviolet, x-ray and gamma-ray), can be found in the document [Note-EMSpectrum-20040520](#).
3. **instr** (instrument)
 In this section we gather all the quantities related to astronomical instrumentation, e.g. detectors (plates, CCDs, etc.), spectrographs, telescopes (but also observatories or missions), etc.
4. **meta** (metadata)
 This section includes all the information that is not coming directly from a measure, and info that could not be included in other sections.
5. **obs** (observation)
 In principle under this section should go all words describing an observation (the name of the observer or PI, the observing conditions, the name of the field). In practice, the section is very “thin” and could be deleted, if the sparse content could be housed elsewhere.
6. **phot** (photometry)
 All the words describing photometric measures are included in this section. Basically we distinguish between a flux density (flux per unit frequency interval), a flux density integrated over a given e.m. interval (flux if expressed linearly, mag if expressed by a log), or a flux expressed in counts/s (if the setup of the detector is photon counting observing mode). We also include “colors”, which are differences of magnitudes (i.e. ratios of fluxes) measured in different e.m. bands. In the present proposal we tried to simplify the PHOT section of old UCD1, keeping only the most important (used, diffuse) colors.
7. **phys** (physics)
 Atomic and molecular data (mainly used for spectroscopy) and basic physical quantities (temperature, mass, gravity, luminosity, etc.)
8. **pos** (positional data)
 All quantities related to the position of an object, in general on the sky. Angular quantities, with the exception of projections from spherical to rectangular systems. Also angular measurements in general (the angular size of an object is in this section, its linear size is in the phys section). The WCS FITS keywords are placed here for the moment.
9. **spect** (spectral data)
 For historical reasons, photometric data taken in narrow spectral bands with instruments called spectrographs are classified as spectroscopic data. Don’t miss up with “**em**”. Bi-dimensionally speaking, **em** represents the x axis, **phot** and **spect** the y axis.
10. **src** (source)
 This is a rather generic section, mainly devoted to source classifications. For no other than practical reasons, variability, orbital and velocity data are also included in this section.
11. **stat** (statistics)
 Statistical information on measurements.
12. **time** (time)
 Quantities related to time (age, date, period, etc.)

A List of valid words

All words are preceded by a “syntax” code that can help in the process of building composed UCD1+.

- The code ”P” means that the word can only be used as ”primary” or first word;
- ”S” stands for only secondary: it can’t be used as the first word to describe a single quantity;
- ”Q” means that the word can be used indifferently as first or secondary word;
- ”E” means a photometric quantity, and can be followed by a word describing a part of the electromagnetic spectrum
- ”C” is a colour index, and can be followed by two successive word describing a part of the electromagnetic spectrum;
- ”V” stands for vector. Such a word can be followed by another describing the axis or reference frame in which the measurement is done

Q arith	Arithmetic quantities
S arith.diff	Difference between two quantities described by the same UCD
P arith.factor	Numerical factor
P arith.grad	Gradient
P arith.rate	Rate (per time unit)
S arith.ratio	Ratio between two quantities described by the same UCD
Q arith.zp	Zero point
S em	Electromagnetic spectrum
S em.IR	Infrared part of the spectrum
S em.IR.15-30um	Infrared between 15 and 30 micron
S em.IR.3-4um	Infrared between 3 and 4 micron
S em.IR.30-60um	Infrared between 30 and 60 micron
S em.IR.4-8um	Infrared between 4 and 8 micron
S em.IR.60-100um	Infrared between 60 and 100 micron
S em.IR.8-15um	Infrared between 8 and 15 micron
S em.IR.H	Infrared H band
S em.IR.J	Infrared J band
S em.IR.K	Infrared K band
S em.UV	Ultraviolet part of the spectrum
S em.UV.10-50nm	Ultraviolet between 10 and 50 nm
S em.UV.100-200nm	Ultraviolet between 100 and 200 nm
S em.UV.200-300nm	Ultraviolet between 200 and 300 nm
S em.UV.50-100nm	Ultraviolet between 50 and 100 nm
S em.X-ray	X-ray part of the spectrum
S em.X-ray.hard	Hard X-ray
S em.X-ray.medium	Medium X-ray
S em.X-ray.soft	Soft X-ray
Q em.energy	Energy value in the em frame
Q em.freq	Frequency value in the em frame
S em.gamma	Gamma rays part of the spectrum
S em.gamma.hard	Hard gamma ray
S em.gamma.soft	Soft gamma ray
S em.line	Designation of major atomic and molecular lines
S em.line.HI	21cm hydrogen line
S em.line.Brgamma	Bracket gamma line
S em.line.Halpha	H-alpha line
S em.line.Hbeta	H-beta line
S em.line.Hgamma	H-gamma line
S em.line.OIII	[OIII] line
S em.mm	Millimetric part of the spectrum
S em.mm.100-200GHz	Millimetric between 100 and 200 GHz
S em.mm.1500-3000GHz	Millimetric between 1500 and 3000 GHz
S em.mm.200-400GHz	Millimetric between 200 and 400 GHz
S em.mm.30-50GHz	Millimetric between 30 and 50 GHz
S em.mm.400-750GHz	Millimetric between 400 and 750 GHz
S em.mm.50-100GHz	Millimetric between 50 and 100 GHz

S em.mm.750-1500GHz	Millimetric between 750 and 1500 GHz
S em.opt	Optical part of the spectrum
S em.opt.B	Optical B band between 400 and 500 nm
S em.opt.I	Optical I band between 750 and 1000 nm
S em.opt.R	Optical R band between 600 and 750 nm
S em.opt.U	Optical U band between 300 and 400 nm
S em.opt.V	Optical V band between 500 and 600 nm
S em.radio	Radio part of the spectrum
S em.radio.100-200MHz	Radio between 100 and 200 MHz
S em.radio.12-30GHz	Radio between 12 and 30 GHz
S em.radio.1500-3000MHz	Radio between 1500 and 3000 MHz
S em.radio.20-100MHz	Radio between 20 and 100 MHz
S em.radio.200-400MHz	Radio between 200 and 400 MHz
S em.radio.3-6GHz	Radio between 3 and 6 GHz
S em.radio.400-750MHz	Radio between 400 and 750 MHz
S em.radio.6-12GHz	Radio between 6 and 12 GHz
S em.radio.750-1500MHz	Radio between 750 and 1500 MHz
Q em.wavenumber	Wavenumber value in the em frame
Q em.wl	Wavelength value in the em frame
Q em.wl.central	Central wavelength
Q em.wl.effective	Effective wavelength
Q instr	Instrument
Q instr.angRes	Angular resolution
E instr.background	Instrumental background
Q instr.bandpass	Bandpass of instrument
Q instr.bandwidth	Bandwidth of the instrument
Q instr.baseline	Baseline for interferometry
S instr.beam	Beam
Q instr.calib	Calibration parameter
S instr.det	Detector
Q instr.det.noise	Instrument noise
Q instr.det.psf	Point Spread Function
Q instr.det.qe	Quantum efficiency
Q instr.filter	Filter
Q instr.filter.transm	Filter transmission
Q instr.fov	Field of view
Q instr.obsty	Observatory satellite mission
Q instr.obsty.site	Observatory location
Q instr.obsty.site.seeing	Seeing
Q instr.offset	Offset angle respect to main direction of observation
Q instr.param	Various instrumental parameters
S instr.pixel	Pixel
S instr.plate	Photographic plate
Q instr.plate.emulsion	Plate emulsion
Q instr.precision	Instrument precision
Q instr.saturation	Instrument saturation threshold
Q instr.scale	Instrument scale (for CCD, plate, image)
Q instr.sensitivity	Instrument sensitivity, detection threshold
Q instr.setup	Instrument configuration or setup
Q instr.skyLevel	Sky level
Q instr.skyTemp	Sky temperature
Q instr.spect	Spectrograph
Q instr.spect.dispersion	Dispersion of spectrograph
Q instr.spect.order	Spectral order
Q instr.spect.resolution	Spectral (or velocity) resolution
Q instr.tel	Telescope
Q instr.tel.focus	Telescope focus
P meta	Metadata
P meta.bib	Bibliographic reference
P meta.bib.author	Author name
P meta.bib.bibcode	Bibcode
P meta.bib.fig	Figure in a paper
P meta.bib.journal	Journal name
P meta.bib.page	Page number
P meta.bib.volume	Volume number
P meta.code	Code or flag
P meta.code.class	Classification code

P meta.code.error	limit uncertainty error flag
P meta.code.member	Membership code
P meta.code.mime	MIME type
P meta.code.multip	Multiplicity or binarity flag
P meta.code.qual	Quality, precision, reliability flag or code
P meta.cryptic	Unknown or impossible to understand quantity
Q meta.dataset	Dataset
Q meta.file	File
S meta.fits	FITS standard
Q meta.fits.software	Software used in generating FITS file
P meta.id	Identifier, name or designation
P meta.id.assoc	Identifier of associated counterpart
P meta.id.cross	Cross identification
P meta.id.parent	Identification of parent source
P meta.id.part	Part of identifier, suffix or sub-component
S meta.main	Main value of something
S meta.modelled	Quantity was produced by a model
P meta.note	Note or remark (longer than a code or flag)
P meta.number	Number (of things; e.g. nb of object in an image)
P meta.record	Record number
P meta.ref	Reference, or origin
P meta.ref.url	URL, web address
S meta.table	Table or catalogue
P meta.title	Title or explanation
Q meta.ucd	UCD
P meta.unit	Unit
S obs	Observation
S obs.air	Atmosphere
Q obs.air.extinction	Atmospheric extinction
Q obs.air.mass	Airmass
S obs.field	Region covered by the observation
S obs.image	Image
Q obs.observer	Observer, discoverer
Q obs.param	Various observation or reduction parameter
E phot	Photometry
E phot.antennaTemp	Antenna temperature
Q phot.calib	Photometric calibration
C phot.color	Color index or magnitude difference
Q phot.color.excess	color excess
Q phot.color.reddFree	Dereddened color
E phot.count	Flux expressed in counts(/s)
E phot.fluence	fluence
E phot.flux	Photon flux
Q phot.flux.bol	Bolometric flux
E phot.flux.sb	Flux surface brightness
E phot.fluxDens	Flux density (per wl/freq/energy interval)
E phot.fluxDens.sb	Flux density surface brightness
E phot.limbDark	Limb-darkening coefficients
E phot.mag	Photometric magnitude
Q phot.mag.bc	Bolometric correction
Q phot.mag.bol	Bolometric magnitude
Q phot.mag.distMod	Distance modulus
E phot.mag.reddFree	Dereddened magnitude
E phot.mag.sb	Surface brightness in magnitude units
E phot.sb	Surface brightness
Q phys	Physical quantities
Q phys.SFR	Star formation rate
E phys.absorption	Extinction or absorption
Q phys.absorption.coeff	Absorption coefficient
Q phys.absorption.gal	Galactic extinction
Q phys.absorption.opticalDepth	Optical depth
Q phys.abund	Abundance
Q phys.abund.Fe	Fe/H abundance
Q phys.abund.X	Hydrogen abundance
Q phys.abund.Y	Helium abundance
Q phys.abund.Z	Metallicity abundance
Q phys.acceleration	Acceleration

Q phys.albedo	Albedo or reflectance
Q phys.angArea	Angular area
Q phys.angMomentum	Angular momentum
Q phys.angSize	Angular size width diameter dimension extension major minor axis extraction radius
Q phys.angSize.smajAxis	angular size extent or extension of semi-major axis
Q phys.angSize.sminAxis	angular size extent or extension of semi-minor axis
Q phys.area	Area (in linear units)
Q phys.at	Atomic physics
Q phys.at.branchingRatio	Branching ratio
Q phys.at.collStrength	Collisional strength
Q phys.at.crossSection	Atomic cross-section
Q phys.at.damping	Atomic damping quantities (van der Waals)
Q phys.at.lande	Lande factor
Q phys.at.lineShift	Line shifting coefficient
Q phys.at.moment	Atomic momentum
Q phys.at.moment.electric	Electric momentum
Q phys.at.moment.magnetic	Magnetic momentum
Q phys.at.number	Atomic number Z
Q phys.at.oscStrength	Oscillator strength
Q phys.at.qn	Atomic quantum number
Q phys.at.qn.I	Nuclear spin quantum number
Q phys.at.qn.S	Electronic spin quantum number
Q phys.at.qn.L	Electronic L quantum number
Q phys.at.qn.J	Coupling of S and L qn
Q phys.at.qn.F	Coupling of J and I qn
Q phys.at.term	Atomic term
Q phys.at.transProb	Atomic transition probability, Einstein A coefficient
Q phys.at.wOscStrength	Weighted oscillator strength
Q phys.at.weight	Atomic weight
Q phys.atmol	Atomic and molecular physics (shared properties)
Q phys.atmol.coll	Related to collisions
Q phys.atmol.configuration	Configuration
Q phys.atmol.element	Element
Q phys.atmol.excitation	Atomic molecular excitation parameter
Q phys.atmol.ion	Ion
S phys.atmol.ionization	Related to ionization
S phys.atmol.level	Atomic level
Q phys.atmol.parity	Parity
Q phys.atmol.state.final	Quantity refers to atomic molecular final/ground state
Q phys.atmol.state.initial	Quantity refers to initial state
Q phys.atmol.sweight	Statistical weight
S phys.atmol.trans	Transition between states
Q phys.columnDensity	Column density
Q phys.density	Density (of mass, electron, energy...)
Q phys.dielectric	Complex dielectric function
Q phys.dispMeasure	Dispersion measure
V phys.electField	Electric field
S phys.electron	Electron
Q phys.electron.degen	Electron degeneracy parameter
Q phys.emissMeasure	Emission measure
Q phys.emissivity	Emissivity
Q phys.energy	Energy
Q phys.eos	Equation of state
Q phys.excitParam	Excitation parameter U
Q phys.gauntFactor	Gaunt factor/correction
Q phys.gravity	Surface gravity
Q phys.ionizParam	Ionization parameter
Q phys.ionizParam.coll	Collisional ionization
Q phys.ionizParam.rad	Radiative ionization
E phys.luminosity	Luminosity
Q phys.luminosity.fun	Luminosity function
E phys.magAbs	Absolute magnitude
Q phys.magAbs.bol	Bolometric absolute magnitude
V phys.magField	Magnetic field
Q phys.mass	Mass
Q phys.mass.light	Mass to light ratio
Q phys.mass.loss	Mass loss

Q phys.massYield	Mass yield
Q phys.mol	Molecular data
Q phys.mol.dipole	Molecular dipole
Q phys.mol.dipole.electric	Electric molecular dipole
Q phys.mol.dipole.magnetic	Magnetic molecular dipole
Q phys.mol.dissociation	Molecular dissociation
Q phys.mol.formationHeat	Formation heat for molecules
Q phys.mol.qn	Molecular quantum numbers
Q phys.mol.quadrupole	Molecular quadrupole
Q phys.mol.quadrupole.electric	Electric molecular quadrupole
Q phys.mol.quadrupole.magnetic	Magnetic molecular quadrupole
S phys.mol.rotation	Molecular rotation
S phys.mol.vibration	Molecular vibration
Q phys.polarization	Polarization
Q phys.polarization.rotMeasure	Rotation measure polarization
Q phys.polarization.stokes	Stokes polarization
Q phys.pressure	Pressure
Q phys.recombination.coeff	Recombination coefficient
Q phys.refraction	Refraction
Q phys.size	Size (not angular)
Q phys.size.diameter	Diameter
Q phys.size.radius	Radius
Q phys.size.smajAxis	Linear semi major axis
Q phys.size.sminAxis	Linear semi minor axis
Q phys.temperature	Temperature
Q phys.temperature.effective	Effective temperature
Q phys.temperature.electron	Electron temperature
Q pos	Position and coordinates
Q pos.angDistance	Angular distance
Q pos.az	Position in alt-azimutal frame
Q pos.az.alt	Alt-azimutal altitude
Q pos.az.ha	Alt-azimutal hour-angle
Q pos.az.zd	Alt-azimutal zenith distance
S pos.barycenter	Barycenter
S pos.cartesian	Cartesian (rectangular) coordinates
Q pos.cartesian.x	Cartesian coordinate along the x-axis
Q pos.cartesian.y	Cartesian coordinate along the y-axis
Q pos.cartesian.z	Cartesian coordinate along the z-axis
Q pos.dirCos	Direction cosine
V pos.distance	Linear distance
S pos.earth	Coordinates related to Earth
Q pos.earth.lat	Latitude on Earth
Q pos.earth.lon	Longitude on Earth
Q pos.earth.nutation	Earth nutation
S pos.ecliptic	Ecliptic coordinates
Q pos.ecliptic.lat	Ecliptic latitude
Q pos.ecliptic.lon	Ecliptic longitude
S pos.errorEllipse	Positional error ellipse
Q pos.ephem	Ephemeris
S pos.eq	Equatorial coordinates
Q pos.eq.dec	Declination in equatorial coordinates
Q pos.eq.ra	Right ascension in equatorial coordinates
Q pos.eq.spd	South polar distance in equatorial coordinates
Q pos.frame	Reference frame used for positions
S pos.galactic	Galactic coordinates
Q pos.galactic.lat	Latitude in galactic coordinates
Q pos.galactic.lon	Longitude in galactic coordinates
S pos.galactocentric	Galactocentric coordinate system
S pos.geocentric	Geocentric coordinate system
Q pos.healpix	Hierarchical Equal Area IsoLatitude Pixelization
S pos.heliocentric	Heliocentric position coordinate (solar system bodies)
Q pos.htm	Hierarchical Triangular Mesh
S pos.lambert	Lambert projection
Q pos.lunar	Lunar coordinates
Q pos.lunar.occult	Occultation by lunar limb
Q pos.parallax	Parallax
Q pos.parallax.dyn	Dynamical parallax

Q pos.parallax.phot	Photometric parallaxes
Q pos.parallax.spect	Spectroscopic parallax
Q pos.parallax.trig	Trigonometric parallax
V pos.pm	Proper motion
Q pos.posAng	Position angle of a given vector
V pos.precess	Precession
Q pos.satellite	Position/coordinates of satellite or planet
S pos.supergalactic	Supergalactic coordinates
Q pos.supergalactic.lat	Latitude in supergalactic coordinates
Q pos.supergalactic.lon	Longitude in supergalactic coordinates
P pos.wcs	WCS keywords
P pos.wcs.cdmatrix	WCS CDMATRIX
P pos.wcs.crpix	WCS CRPIX
P pos.wcs.crval	WCS CRVAL
P pos.wcs.ctype	WCS CTYPE
P pos.wcs.naxes	WCS NAXES
P pos.wcs.naxis	WCS NAXIS
P pos.wcs.scale	WCS scale or scale of an image
Q spect	Spectroscopy
Q spect.doppler	Doppler parameter b
E spect.index	Spectral index
E spect.line	Spectral line
E spect.line.asymmetry	Line asymmetry
E spect.line.broad	Spectral line broadening
Q spect.line.broad.Stark	Stark line broadening coefficient
E spect.line.broad.Zeeman	Zeeman broadening
E spect.line.eqwidth	Line equivalent width
E spect.line.intensity	Line intensity
E spect.line.profile	Line profile
E spect.line.width	Spectral line fwhm
E spect.veloc	Spectral radial velocity
S src	Source
Q src.class	Source classification (star, galaxy, cluster...)
Q src.class.color	Color classification
Q src.class.distance	Abell distance class
Q src.class.luminosity	Luminosity class
Q src.class.richness	Richness Abell class
Q src.class.starGalaxy	Star/galaxy discriminator
Q src.class.struct	Bautz-Morgan structure classification
Q src.density	Density of sources
Q src.ellipticity	Source ellipticity
Q src.fwhm	Source FWHM angular size
Q src.impactParam	Impact parameter
Q src.morph	Morphology structure
Q src.morph.param	Morphological parameter
Q src.morph.scLength	Scale length for a galactic component (disc or bulge)
Q src.morph.type	Hubble morphological type (galaxies)
Q src.orbital	Orbital parameters
Q src.orbital.eccentricity	Orbit eccentricity
Q src.orbital.inclination	Orbit inclination
Q src.orbital.meanAnomaly	Orbit mean anomaly
Q src.orbital.node	Ascending node
Q src.orbital.periastron	Periastron
Q src.orbital.veloc	Orbital velocity
Q src.redshift	Redshift
Q src.redshift.phot	Photometric redshift
Q src.sample	Sample
Q src.spType	Spectral type MK
Q src.var	Variability of source
E src.var.amplitude	Amplitude of variation
Q src.var.index	Variability index
Q src.var.pulse	Pulse
V src.veloc	Radial velocity
Q src.veloc.ang	Angular velocity
Q src.veloc.cmb	CMB velocity
Q src.veloc.dispersion	Velocity dispersion
Q src.veloc.escape	Escape velocity

Q src.veloc.expansion	Expansion velocity
Q src.veloc.lg	Local Group radial velocity
Q src.veloc.lsr	Local Standard of Rest radial velocity
Q src.veloc.microTurb	Microturbulence velocity
Q src.veloc.pulsat	Pulsational velocity
Q src.veloc.rotat	Rotational velocity
Q stat	Statistical parameters
Q stat.Fourier	Fourier coefficient
Q stat.Fourier.amplitude	Amplitude Fourier coefficient
P stat.correlation	Correlation between two parameters
P stat.covariance	Covariance between two parameters
P stat.error	Statistical error
P stat.error.sys	Systematic error
Q stat.fit	Fit
P stat.fit.chi2	Chi2
P stat.fit.dof	Degrees of freedom
P stat.fit.goodness	Goodness or significance of fit
Q stat.fit.omc	Observed minus computed
Q stat.fit.param	Parameter of fit
P stat.fit.residual	Residual fit
P stat.likelihood	Likelihood
S stat.max	Maximum or upper limit
S stat.mean	Mean, average value
S stat.median	Median value
S stat.min	Minimum or lowest limit
Q stat.param	Parameter
P stat.snr	Signal to noise ratio
P stat.stdev	Standard deviation
Q stat.value	Miscellaneous value
P stat.variance	Variance
P stat.weight	Statistical weight
Q time	Time
Q time.age	Age
Q time.crossing	Crossing time
Q time.epoch	Epoch, julian date
Q time.equinox	Equinox
Q time.expo	Exposure time
Q time.expo.end	end exposure
Q time.expo.start	start exposure
Q time.interval	Interval
Q time.lifetime	Lifetime
Q time.period	Period
Q time.phase	Phase
Q time.relax	Relaxation time
Q time.resolution	Time resolution
Q time.scale	Timescale

B Changes from previous versions

Changes from v0.1

- Descriptions of the words were improved.
- Designation of commonly used lines have been moved to **em.line.***. As a consequence, terms like **em.IR.K.Brgamma** or **spect.index.Hbeta** have been removed.
- **phys.at** and **phys.mol** have been completely reorganized to improve the overall description of this domain. A new branch **phys.atmol** has been introduced to group concepts shared between **phys.at** and **phys.mol**.
- The **phot.color** section was significantly simplified.
- Missing nodes of the tree were added (e.g. **em.gamma**, **em.mm**, **pos.sg**).
- Creation of new words: **em.wavenumber**, **meta.ucd**, **stat.error.sys**
- Typos were corrected in **em.opt.*** units and a few other descriptions.

Changes from v0.2

- Section 1.2 has been simplified
- 3 new syntax codes (E, C, V) have been introduced, and described in appendix A
- The following words have been created:

```
instr.beam
meta.code.error
meta.id.part
phot.flux.sb
phys.angArea
phys.angSize
phys.angSize.smajAxis
phys.angSize.sminAxis
phys.area
phys.at.damping
phys.at.weight
phys.atmol.excitation
phys.mol.dissociation
phys.recombination.coeff
phys.size.smajAxis
phys.size.sminAxis
pos.cartesian
pos.cartesian.x
pos.cartesian.y
pos.cartesian.z
pos.distance
pos.eq.spd
pos.galactocentric
pos.geocentric
pos.healpix
pos.heliocentric
pos.htm
pos.lambert
pos.satellite
spect.line.broad.Stark
spect.veloc
src.redshift.phot
stat.correlation
time.lifetime
```

- Some words have been removed. The following table summarizes, when relevant, the suggested replacement to be used.

Deprecated UCD	New corresponding UCD
instr.area	phys.area;instr
instr.beam-width	phys.angSize;instr.beam
meta.table.axis	phys.size;meta.table
phot.color.Cous	phot.color
phot.color.Gen	phot.color
phot.color.Gunn	phot.color
phot.color.JHN	phot.color
phot.color.STR	phot.color
phot.color.STR.c1	phot.color
phot.color.STR.b-y	phot.color
phot.color.STR.m1	phot.color
phys.at.lineBroad	spect.line.broad
phys.distance.compon	pos.distance;pos.cartesian.x (or y, z)
phys.distance.gc	pos.distance;pos.galactocentric
phys.electron.energy	phys.energy;phys.electron
phys.extension	phys.angSize or phys.size
phys.mass.fraction	phys.mass;arith.ratio
phys.polarization.posAng	pos.posAng;phys.polarization
pos.ang	
pos.det	pos.cartesian;instr.det
pos.eq.dec.arcsec	
pos.eq.ra.minutes	
pos.eq.ra.seconds	
pos.gal.compon	pos.cartesian;pos.galactic
pos.pm.dec	pos.pm;pos.eq.dec
pos.pm.ra	pos.pm;pos.eq.ra
pos.precess.dec	pos.precess;pos.eq.dec
pos.precess.ra	pos.precess;pos.eq.ra
pos.proj	
pos.sg.compon	pos.cartesian;pos.supergalactic
src.orbital.energy	phys.energy;src.orbital
src.orbital.separation	pos.angDistance;src.orbital
src.orbital.size	phys.size;src.orbital
src.separation	pos.angDistance;src
src.veloc.compon	src.veloc;pos.cartesian
src.veloc.gc	src.veloc;pos.galactocentric
src.veloc.geoc	src.veloc;pos.geocentric
src.veloc.hc	src.veloc;pos.heliocentric

- The following words have been renamed :

Deprecated UCD	New corresponding UCD
em.line.21cm	em.line.HI
instr.ang-res	instr.angRes
instr.sky-level	instr.skyLevel
instr.sky-temp	instr.skyTemp
instr.antenna-temp	phot.antennaTemp
phys.absorption.gf	phys.gauntFactor
phys.at.einstein	phys.at.transProb
phys.at.level	phys.atmol.level
phys.dispMeas	phys.dispMeasure
phys.distance	pos.distance
phys.polarization.rotMeas	phys.polarization.rotMeasure
phys.size.area	phys.area
pos.ang.separation	pos.angDistance
pos.ec	pos.ecliptic
pos.ec.lat	pos.ecliptic.lat
pos.ec.lon	pos.ecliptic.lon
pos.ee	pos.errorEllipse
pos.gal	pos.galactic
pos.gal.lat	pos.galactic.lat
pos.gal.lon	pos.galactic.lon
pos.sg	pos.supergalactic
pos.sg.lat	pos.supergalactic.lat
pos.sg.lon	pos.supergalactic.lon
src.class.star-galaxy	src.class.starGalaxy