RFM (Request for modification) on the List of UCD-words

Collection, over the past few month, of suggestions to modify/add (mainly add) the present standard list of ucd-words. A tentative reasonable syntax flag was added.

RFM (on descriptions):

Steve Allen
.. My confusion stems from the fact that the semantic definition for all of the UCD words consists of an incomplete sentence. ..
For the sake of averting subsequent misinterpretations, is there a way to include richer semantic definitions as part of the document itself? Or alternatively, to include an explicit, and obvious, reference to a separate "usage" document with examples, correspondences with FITS keywords, etc?

RFM (add new UCDs):

Laurie Shaw

S	comp.sim	computational simulation
S	comp.sim.nbody	Nbody simulation
S	comp.sim.sph	Smoothed Particle Hydrodynamics simulation
S	comp.sim.boxside	Simulation box
S	comp.sim.gravsoft	gravitational softening
S	comp.sim.particles	simulation particles - for Nbody and SPH simulations
S	comp.sim.snapshot	output of a simulation box at a particular instant
S	comp.sim.grid	simulation grid - for hydro simulations

The number of particles in the simulation box, number of grid points, particle mass, gravitational softening length and simulation box side length would therefore be:

meta.number;comp.sim.particles
meta.number;comp.sim.grid
phys.mass;comp.sim.particles
phys.size;comp.sim.gravsoft
phys.size;comp.sim.boxside

(For the last two, introduction of a phys.size.length UCD might provide a more accurate description.)

The mass of an object in terms of the number of particles it contains:

phys.mass;meta.number;comp.sim.particles

Other possible sub-branches could be

Q	comp.resource	computational resources used in simulation/data processing

Q | comp.resource.processors | processors used
Q | comp.resource.memory | total size of a data file

plus those that are more specific to data-reduction/post-processing of observational data. Algorithms that might apply to both simulated and observed data (e.g. smoothing of images or particle densities) would be listed directly under the comp branch:

S | comp.smooth | smoothing of images or particle densities

phys.size;comp.smooth
(or, with the introduction of a phys.size.length UCD: phys.size.length;comp.smooth)

Q | phys.cosmology | cosmology
Q | phys.cosmology.omega | matter/energy density of universe
Q | phys.cosmology.hubble | hubble constant
Q | phys.cosmology.sigma8 | Normalisation of matter power-spectrum

and also:

S | phys.matter.dark | dark matter tag
S | phys.matter.baryon | baryonic matter tag
S | phys.DarkEnergy | dark energy tag

So, Omega_Lambda, Omega_DM, Omega_baryon would be

phys.cosmology.omega;phys.DarkEnery,
phys.cosmology.omega;phys.matter.dark
phys.comsology.omega;phys.matter.baryonic

Now we can also describe the number of dark matter (gas particles) in an SPH simulation, or a simulated object (star/galaxy/halo) using:

meta.number;comp.sim.particles;phys.matter.dark(/baryonic)

Furthermore, the mass and radius of dark matter halos in cosmological simulations are frequently defined in terms of a virial overdensity. Hence a phys.virial UCD would be usefull in specifying what is meant by the mass and radius of a halo:

S | phys.virial | virial (?)

phys.mass;phys.virial (virial mass)
phys.size.radius;phys.virial (virial radius)

phys.redshift;comp.sim.snapshot

galaxies;comp.sim (a simulated galaxy)
galaxies.spiral;comp.sim (a simulated spiral galaxy)

phys.mass;object.DMhalo.subhalo
meta.num;onject.DMhalo.subhalo

JMcD:

Q | phys.atmol | suppress

Q | phys.atmol.element | phys.species.element
Q | phys.atmol.excitation | phys.species.excitation
Q | phys.atmol.ion | phys.species.ion
S | phys.atmol.ionization | phys.species.ionization
Q | phys.at.number | phys.species.atomicNumber
Q | phys.at.weight | phys.species.weight

Q | phys.atmol.branchingRatio | phys.transition.branchingRatio
Q | phys.atmol.coll | phys.transition.collision
Q | phys.atmol.crossSection | phys.transition.crossSection
Q | phys.atmol.lineShift | phys.transition.lineShift
S | phys.atmol.trans | phys.transition.trans (?)
Q | phys.at.collStrength | phys.transition.collStrength
Q | phys.at.damping | phys.transition.damping
Q | phys.at.lande | phys.transition.Lande factor
Q | phys.at.oscStrength | phys.transition.oscStrength
Q | phys.at.radiationType | phys.transition.radiationType
Q | phys.at.term | phys.transition.term
Q | phys.at.transProb | phys.transition.prob
Q | phys.at.wOscStrength | phys.transition.wOscStrength

Q | phys.atmol.parity | phys.state.parity
Q | phys.atmol.sweight | phys.state.sweight
Q | phys.atmol.configuration | phys.state.configuration
Q | phys.atmol.final | phys.state.final
Q | phys.atmol.initial | phys.state.initial
S | phys.atmol.level | phys.state.level
Q | phys.atmol.lifetime | phys.state.lifetime
Q | phys.at.qn | phys.state.qn
Q | phys.at.qn.I | phys.state.qn.I

S | src.net | indicating that a quantity (e.g. flux) is background subtracted rather than total

Tom McGlynn, Michael Preciado:

S | obs.proposal | observation and proposal

meta.id;obs.proposal name of the proposal
meta.code;obs.proposal proposal code
time.expo;obs.proposal proposed exposure time

Q | obs.cycle | This defines a proposal cycle
Q | time.release | The time data is available to the public
Q | time.processing | A time associated with the processing of the data for an observation

Q | obs.status | The status of an observation => meta.code or meta.code.status ?

src.count - A number of sources (=> meta.number;src ?)

APM:

Q | time.creation | Creation date (of dataset, file, catalogue,...)
S | em.FIR | Far-Infrared
S | em.MIR | Medium-Infrared
S | em.NIR | Near-Infrared
S | em.FUV | Far-UV

FH:

weather.* weather phenomena
obs.calib.flat* sky/dome flat observations

src.calib calibration source
src.calib.guideStar guide star

examples:
src.calib;phot source used for photometric calibration
src.calib;spectr source used for spectroscopic calibration
src.calib;pos source used for positional/astrometric calibration

phys.particle.*

phot.flux.perFreq
phot.flux.perWave
phot.flux.perEnergy
phot.flux.perWavenumber
phot.flux.perDecade nu*F_nu, lambda*F_lambda,...

Looking at the current list, I'd also like to complain about

phot.flux.sb

Since when is surface brightness a flux? Surface brightness is an intensity and intensity != flux. So...

phot.intensity generic directed rate of radiant energy flow per unit area, time, and solid angle, surface brightness
phot.intensity.bol (not generally needed, but here for symmetry)
phot.intensity.perFreq
phot.intensity.perWave
phot.intensity.perEnergy
phot.intensity.perWavenumber
phot.intensity.perDecade

JMcD+APM (DMSpectral095a):

Q | em.wl.bin
Q | em.freq.bin
Q | em.energy.bin channel / instrumental spectral bin (wl, freq, energy): size of

S | phot.uncalib photometric uncalibrated measurement
Q | stat.filling filling factor

Q | meta.email curation/contact e-mail