R.A.S.C. - BELLEVILLE CENTRE

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Oh, well! It is that time of the year in which the hot and muggy weather will (or could) make our observing rather uncomfortable and miserable. I do not know which is worse - perspiring tens of litres of perspiration during the summer or winter temperatures so low that even ice cubes need thermal under-wear. Your most modest and humblest of newsletter editors (me) hopes that you would be able to take advantage of any good and favourable night-time weather to make useful observations, whether alone or with others.

The Sky Is Falling!
Be Afraid!
Run For Your Life!
Panic, If You Want To!
There Is No Where To Hide!
The Big Crunch Cometh
Woe is Us

Here is a list of useful information of meteor showers:

Radiant	Duration	Maximum

July

Moderate Activity:

Southern delta (δ) Aquarids	14 July - 18 August R.A.: 22h 12m Dec: -16.5°	28/29 July	Z.H.R.: 30

-not visually resolvable from alpha (α) Capricornids

Minor Activity:

alpha (α) Lyrids	09 July - 20 July	14/15 July	
July Phoenicids	09 July - 17 July R.A.: 02h 05m Dec: -49.9°	14/15 July	Z.H.R.: 30
alpha (α) Pisces Australids	16 July - 13 August	30/31 July	
sigma (σ) Capricornids	18 June - 30 July	10 July - 20 July	
tau (τ) Capricornids	02? June - 29 July	12/13 July	
omicron (ο) Draconids	06 July - 28 July R.A.: 18h 04m Dec: +59.0°	17/18 July	Z.H.R.: 03
epsilon (ε) Pegasids	R.A.: 22h 40m Dec: +15.0°	09 July	Z.H.R.: 08
Capricornids	R.A.: 20h 52m Dec: -23.0°	22 July	Z.H.R.: 04
alpha (α) Capricornids	R.A.: 20h 28m Dec: -10.0°	30 July	Z.H.R.: 30

-not visually resolvable from Southern delta (δ) Aquarids

August

South iota (ι) Aquarids**	R.A.: 22h 13m Dec: -14.7°	09 August	Z.H.A.: 15
North iota (ι) Aquarids**	11 August - 10 September	25/26 August	
alpha (α) Capricornids**	15 July - 11 September	01/02 August	
Perseids*	R.A.: 03h 05m Dec: +57.4°	12 August	Z.H.A.: 95
North delta (δ) Aquarids**	R.A.: 22h 36m Dec: -05.0°	12 August	Z.H.A.: 20
kappa (κ) Cygnids**	R.A.: 19h 04m Dec: +50.0°	18 August	Z.H.A.: 05
August Eridanids**	02 August - 27 August	11/12 August	
upsilon (υ) Pegasids**	25 July - 19 August	08/09 August	
alpha (α) Ursa Majorids**	09 August - 30 August	13/14 August	
gamma (γ) Leonids***	14 August - 12 September	25/26 August	

Guide: * -Major Activity
-Beginner Level

** -Minor Activity
-Expert Level (i.e. - Quite Experienced Observer)

*** -Daylight Activity
-Expert Level (i.e. - Quite Experienced Observer)

Planetary Observations (courtesy of R.A.S.C. - 2007 Observer's Handbook)

Mercury - Mercury becomes visible in the morning (a morning apparition). Mercury reaches greatest elongation west (20°) on 20 July and brightens throughout the month. Mercury rises in the east-north-east. Observers at ~45°N would probably require the use of binoculars to observe Mercury in the morning twilight.

Venus - Venus has a magnitude of -4.4 for most of the month of July. Venus begins the month of July high in the west sky, but in the latter half of the month will begin to go down towards the Sun for an 18 August inferior conjunction. By 31 July, Venus will be in the constellation of Sextans, thus affecting its visibility for northern observers. At ~45°N at the end of the month of July, Venus will be 5° above the west horizon at sunset. Venus will be in conjunction with Saturn on 01 July.

Mars - Mars passes from Aries into Taurus on 27 July. At morning astronomical twilight, Mars is well up in the east.

Jupiter - Jupiter transits at 21:00 on 15 July and sets in the west-south-west near 02:00.

Saturn - Saturn is in the constellation of Leo and sets in the west-north-west near the evening nautical twilight at 45°N. Saturn will be in conjunction with Venus on 01 July.

On the evening of 16 July, there is a binocular grouping of the young waxing crescent Moon, Venus, Saturn, and Regulus.

Full Moon:	Monday, 30 July, 2007 00h 48m
Last Quarter:	Saturday, 07 July, 2007 16h 54m
New Moon:	Saturday, 14 July, 2007 12h 04m
First Quarter:	Sunday, 22 July, 2007 06h 29m
Apogee:	Sunday, 22 July, 2007 09h 404,150 kilometres
Perigee:	Monday, 09 July, 2007 22h 368,528 kilometres

Morphology & Classification Of Galaxies

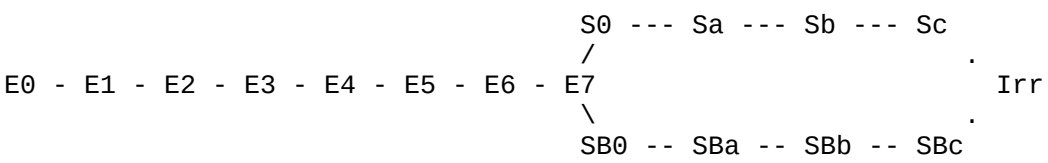
Galactic classification is harder than stellar classification because galaxies come in an enormous range of forms. Classification schemes based on local examples, including the standard Hubble system, may have to give way to quantitative measures of morphology as investigations probe the universe at red-shifts of z = 0.5 and beyond.

Classification Systems

Here is summarised four general and widely-used schemes of galaxy classification.

The Hubble System

Hubble's classification system is most completely described in the Hubble Atlas of Galaxies (Sandage 1961). The wonderful large-scale galaxy photos in this atlas serve as examples of each type; galaxies of unknown type are classified by comparison with these examples.



The classic 'tuning-fork' diagram illustrates the main types within Hubble's scheme. E galaxies are featureless ovals, graded by flattening. S0 & SB0 galaxies are essentially disk galaxies without spiral structure. S & SB are spiral galaxies, graded by (i) bulge/disk ratio, (ii) pitch angle of spiral arms, and (iii) 'resolution' of arms. SB0 & SB galaxies have strong central bars. Finally, Irr galaxies have irregular forms; these objects may be connected to late-type spirals through the provisional Sd type.

The grading E galaxies by apparent axial ratio is objective and unambiguous; it is also rather superficial. On the other hand, the grading S and SB galaxies, while somewhat subjective and uncertain, reflects real physical distinctions.

The de Vaucouleurs System

The Reference Catalogue of Bright Galaxies by G. & A. de Vaucouleurs (1964) employs a galactic classification scheme offering a finer level of discrimination than Hubble's system. This expanded system locates each galaxy within a lemon-shaped 3-D classification volume; the major axis of the lemon defines a progression from ellipticals to lenticulars to spirals to irregulars roughly analogous to Hubble's E - S0 - S - Irr sequence. Each slice perpendicular to the major axis defines a 2-D space of possible forms including various combinations of spirals, bars, and rings. The de Vaucouleurs system also interpolates Sd and Sm types between spirals and irregulars.

The Yerkes System

Developed at Yerkes observatory (Morgan 1958), this scheme is motivated by a correlation between the central concentration of a galaxy's light and the dominant spectral class of its stellar population (Morgan & Mayall 1957).

Galaxies with spread-out luminosity profiles exhibit spectral absorption features typical of A stars, while those with highly-concentrated profiles generally have spectral features of K stars. While this classification scheme is based on the appearance of galaxies, it labels them according to anticipated spectral type. The complete scheme employs three classification dimensions:

-concentration, designated by the letters a, af, f, fg, g, gk, k;

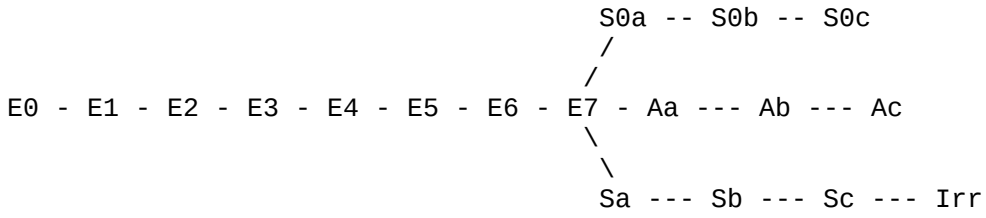
-form, which may be S (spiral), B (barred), E (elliptical), I (irregular), R (rotationally symmetric), or D (diffuse outer envelope);

-flattening, ranging from 0 to 6.

-cD galaxies are a special case, with very extended outer envelopes not apparent in short exposures. Here the 'c' prefix indicates a super-giant galaxy.

The DDO System

The DDO system, developed by van den Bergh (1960), combines elements of the Hubble and Yerkes systems, and introduces 'quality and length of spiral arms' as a proxy for luminosity.



In this 'trident' diagram the horizontal axis indicates degree of central concentration or bulge/disk ratio; E galaxies are the most concentrated, while Irr galaxies are the most spread-out. The vertical axis indicates strength of spiral structure; S0 galaxies show no spiral patterns, A galaxies have low-contrast spirals, and S galaxies have strong, well-defined spirals. Barred disk galaxies are indicated by a B after the S0, A, or S. Finally, late-type galaxies are graded by the appearance of their spiral arms into luminosity classes I to III (for Sb galaxies) or I to V (for Sc galaxies).

The primary dimensions of this system all correlate with physical characteristics of galaxies. As in Yerkes system, central concentration correlates with stellar population. The sequence from S0 to A to S is a progression in neutral hydrogen gas content. And the luminosity classes roughly correspond to 1 magnitude steps in absolute magnitude.

Article based upon information gleaned from the Internet. I am not the original author.