

# Bootes (The Herdsman) and Corona Borealis (The Northern Crown)

## Small Scope Objects:

✓	Name	R.A.	Decl.	Details
	<b>ε Bootes (Izar)</b>	14hr 45m	+27° 04'	A close double star, components are mag. 2.5 and 4.9. Separation of 2.8 arc seconds in P.A. 339°. Yellowish-orange and blue in colour.
	<b>NGC 5248</b>	13hr 38m	+08° 53'	The brightest galaxy in Bootes, it will require a night of good transparency with smaller scopes. An Sc spiral, mag. 10.2, 6.5 x 5.3 arc minutes. Spiral structure visible with larger scopes. (Boo)
	<b>X Bootes</b>	14hr 51m	+19° 06'	An easy double star with 8 arc second separation in P.A. 230°. Components are mags. 4.7 and 7.0, yellow and red-orange in colour.

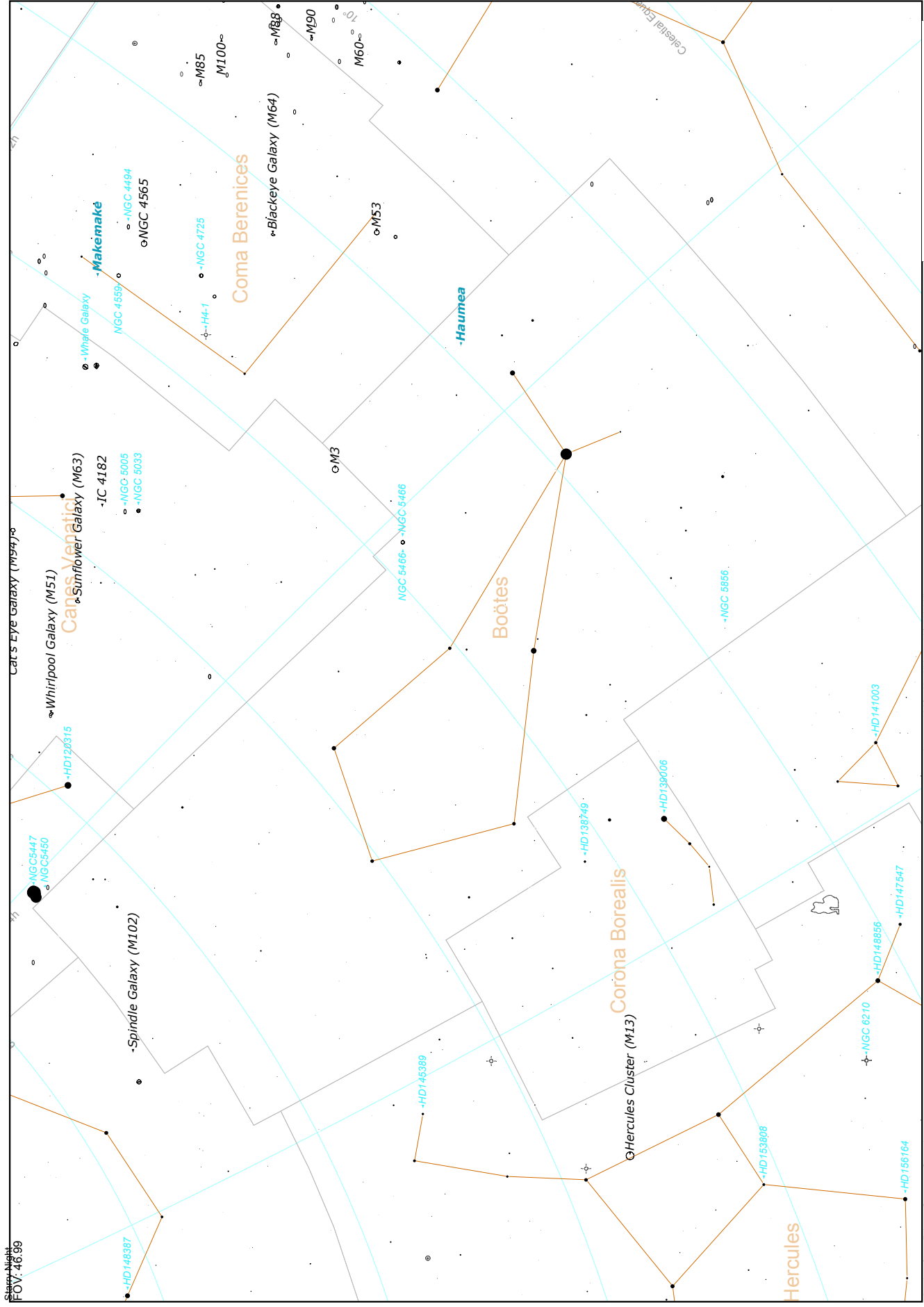
## Big Scope Objects:

✓	Name	R.A.	Decl.	Details
	<b>NGC 5466'</b>	14hr 05.5m	+28° 32'	A loose, class XII globular cluster. Magnitude 9.1, 9 arc minutes in diameter. Difficult with smaller instruments. (110NGC) (Boo)
	<b>NGC 5523</b>	14hr 15m	+25° 19'	An edge-on, Sb spiral galaxy, with a blue magnitude of 12.9. 4.6 x 1.2 arc minutes in size. (Boo)
	<b>NGC 5676</b>	14hr 33m	+49° 28'	A brighter Sc spiral, mag. 10.9, 3.9 x 2.0 arc minutes (Boo)
	<b>NGC 5929 and NGC 5930</b>	15hr 26m	+41° 41'	A pair of interacting 13.1 magnitude spiral galaxies. Sizes are 1.1 x 1, and 2.0 x 1.0 arc minutes, respectively. (Boo)
	<b>NGC 5544 and NGC 5545</b>	14hr 17m	+36° 34'	Another pair of interacting mag. 13.2 spiral galaxies. 1.1 x 1.1 and 1.3 x 0.5 arc minutes respectively. Look for 11th mag E1 galaxy <b>NGC 5557</b> located in the same low power field, 17.4 arc minutes WSW. (Boo)
	<b>NGC 5958</b>	15hr 35m	+28° 40'	One of the brightest Corona galaxies, at mag. 13. Only 1.1 x 1 arc minutes in size. (CrB)

## Challenge Object:

✓	Name	R.A.	Decl.	Details
	<b>NGC 5797 Group</b>	14hr 56m	+49° 42'	A compact group of fainter galaxies, mags. 13.8 to 14.8. Galaxies average about 1 x 1 arc minutes in size. <b>NGC's 5795, 5804, 5805, 5794</b> (Boo)

StarryNight  
FOV: 46.99



Viewing from Prince George, Canada  
Chart centre (J2000): RA: 14h 34.909m Dec: 29° 50.420'  
Altitude: 50° 1.744', Azimuth: 108° 53.500' (east)  
Long: -122° 43' 42" Lat: 53° 55' 09"  
2010/04/25 10:32:00 PM (Local)  
Limiting Magnitude: 6.5

# Canes Venatici (The Hunting Dogs)

## Small Scope Objects:

✓	Name	R.A.	Decl.	Details
	<i>α</i> Canum Venaticorum (Cor Caroli)	12hr 56m	+38° 19'	An easy double star, components are mag. 3.0 and 5.5. Separation is 19.6 arc seconds in P.A. 228°, colours are bluish-white and white.
	<i>U</i> Canum Venaticorum	12hr 45m	+45° 26'	A semi-regular variable of 160 days, varying from mag 4.8 to 6.3. One of the reddest stars known, Y is a carbon star glowing at 2600° K, spectral class N. Try defocussing the star slightly to help make the colour more obvious.
	<b>M3'</b> (NGC 5272)	13hr 42.2m	+28° 23'	A bright mag 6 globular cluster, visible in binoculars. 18 arc minutes in diameter, can be resolved to the core with a 12 inch scope.
	<b>M51'</b> (NGC 5194/5)	13hr 29.9m	+47° 12'	The "Whirlpool Galaxy" - a bright interacting face-on Sc spiral galaxy with <b>NGC 5195</b> . Mag 8.7, covering 5.5 x 10 arc minutes. Visible in large binoculars, considerable detail in larger scopes.
	<b>M63'</b> (NGC 5055)	13hr 15.8m	+42° 02'	The "Sunflower Galaxy" - a mag 9.8 multi-arm Sb spiral , 9 x 4 arc minutes. A bright core is visible in smaller scopes, spiral arms will require large aperture. Same distance as <b>M51</b> - 10 megaparsecs.
	<b>M94</b> (NGC 4736)	12hr 50.9m	+41° 07'	A bright, compact, tightly wound mag 8.9 Sb galaxy. 5 x 3.5 arc minutes, with a very intense nucleus. Spiral arms are fainter, large scopes needed to observe any detail.
	<b>M106'</b> (NGC 4258)	12hr 19.0m	+47° 18'	An Sb spiral with very high surface brightness. Mag. 9.0, 19.5 x 6.5 arc minutes. Larger scopes show detail in the disturbed core - also a bright radio source.

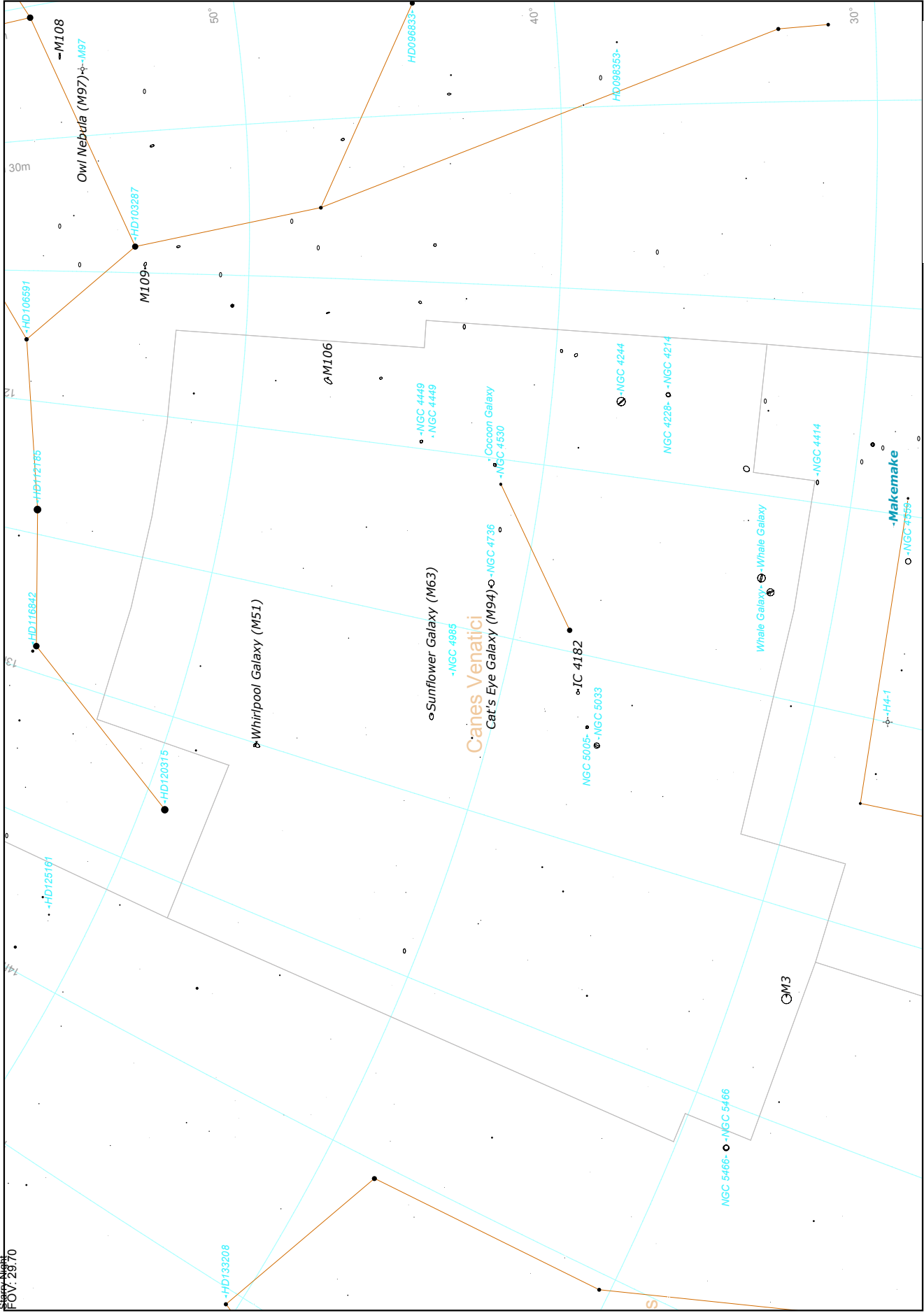
## Big Scope Objects:

✓	Name	R.A.	Decl.	Details
	<b>NGC 4111'</b>	12hr 07.1m	+43° 04'	A magnitude 10.8 S0 galaxy - bright, small and very elongated. 4.8 x 1.1 arc minutes. (110NGC)
	<b>NGC 4214'</b>	12hr 15.6m	+36° 20'	An irregular galaxy. Mag 9.7, 7.9 x 6.3 arc min.(110NGC)
	<b>NGC 4244''</b>	12hr 17.5m	+37° 49'	A bright Sb edge-on spiral, NE of <b>NGC 4214</b> . Mag 10.2, 16 x 2.5 arc minutes with good surface brightness. (110NGC)
	<b>NGC 4449'</b>	12hr 28.2m	+44° 06'	A mag 9.4 irregular galaxy, 5.1 x 3.7 arc minutes. (110NGC)
	<b>NGC 4490' and NGC 4485</b>	12hr 30.6m	+41° 38'	The "Cocoon Galaxy" - an interacting pair of galaxies. (4485 is irregular, 4490 Sc (110NGC)) Mag. 12.5 and 10.1, 1.3 x .7 and 5 x 2 arc minutes. Visible with a 6 inch scope.
	<b>NGC 4631''</b>	12hr 42.1m	+32° 32'	A large, bright mag 9.3 Sc spiral. 15.1 x 3.3 arc minutes. Large amounts of dust give it a mottled appearance. Look for 12.5 mag <b>NGC 4627</b> 2.7 arc min away. (110NGC)
	<b>NGC 4656'' and NGC 4657'</b>	12hr 44.0m	+32° 10'	Located in the same low power field as <b>NGC 4631</b> , this Sc spiral measures 13.8 x 3.3 arc minutes. NGC 4657 sits on the NE end. (110NGC)
	<b>NGC 5005'</b>	13hr 10.9m	+37° 03'	Yet another bright Sb galaxy, near a CVn. Mag 9.8, 5.4 x 2.7 arc minutes.(110NGC)
	<b>NGC 5033'</b>	13hr 13.4m	+36° 36'	An Sb spiral galaxy, located SE of <b>NGC 5005</b> . Mag 10.1, 10.5 x 5.6 arc minutes. Larger than 5005, but of lower surface brightness. (110NGC)

## Challenge Objects:

✓	Name	R.A.	Decl.	Details
	<b>NGC 4395</b>	12hr 26m	+33° 33'	A large, faint, triple-armed Sa spiral of low surface brightness. Mag 10.2, but spread over an area of 14.5 x 12.0 arc minutes.

Starry Nights  
FOV: 29.70



- Globular Cluster
- Cluster
- + Quasar
- Variable
- Multiple
- Planetary

Long: -122° 43' 42" Lat: 53° 55' 09"  
2010/05/15 11:00:08 PM (Local)  
Limiting Magnitude: 7.5

Viewing from Prince George, Canada  
Chart centre (J2000): RA: 13h 4.199m Dec: 41° 30.642'  
Altitude: 77° 5.946', Azimuth: 196° 56.657' (south)

# Virgo

## Small Scope Objects:

✓	Name	R.A.	Decl.	Details
	M49 (NGC 4472)	12hr 29.8m	+08° 00'	A mag 8.4 elliptical (E4) galaxy, 8.9 x 7.4 arc minutes across.
	M58 (NGC 4579)	12hr 37.7m	+11° 49'	A mag 9.8 Sb spiral galaxy, 5.4 x 4.4 arc minutes across.
	M59 (NGC 4621)	12hr 42.0m	+11° 39'	A mag 9.8 E3 elliptical galaxy, 5.1 x 3.4 arc minutes across.
	M60 (NGC 4649)	12hr 43.7m	+11° 33'	A mag 8.8 E1 elliptical galaxy, 7.2 x 6.2 arc minutes across. Located in the same low power field as M59. Look for NGC 4647 4 arc min. NW.
	M61 (NGC 4303)	12hr 21.9m	+04° 28'	A mag 9.7 face-on spiral, 6.0 x 5.5 arc minutes across.
	M84 <sup>1</sup> (NGC 4374)	12hr 25.1m	+12° 53'	A bright pair of elliptical galaxies (M84/86) in the heart of the Virgo cluster. Part of the "Markarian Chain". Mags 9.3 and 9.2. Sizes 5.0 x 4.4 and 7.4 x 5.5 arc min.
	M86 <sup>1</sup> (NGC 4406)	12hr 26.2m	+12° 57'	See M84.
	M87 (NGC 4486)	12hr 30.8m	+12° 24'	Another bright elliptical galaxy, mag 8.6., 7.2 x 6.8 arc min. One of the largest and most luminous know galaxies, also a strong radio and X-ray source.
	M89 (NGC 4552)	12hr 35.7m	+12° 33'	An E0 elliptical galaxy , 4.2 x 4.2 arc minutes, mag 9.8.
	M90 (NGC 4569)	12hr 36.8m	+13° 10'	A bright, Sb spiral galaxy. Mag 9.5, 9.5 x 4.7 arc minutes.
	M104 <sup>1</sup> (NGC 4594)	12hr 40.0m	-11° 37'	The "Sombrero Galaxy" - an Sb spiral galaxy. Mag 8.3, 8.9 x 4.1 arc minutes. Features a prominent dust lane, tilted almost edge-on.

## Big Scope Objects:

✓	Name	R.A.	Decl.	Details
	NGC 4216 <sup>1</sup>	12hr 15.9m	+13° 09'	A mag. 9.9 Sb spiral, 8.3x 2.2 arc min, almost edge-on. (110NGC)
	NGC 4388 <sup>1</sup>	12hr 25.8m	+12° 40'	A mag 11 Sb galaxy near M84/86. Mag 10.9, 5.1 x 1.4 arc min. (110NGC)
	NGC 4438 <sup>1</sup> and NGC 4435 <sup>1</sup>	12hr 27.8m	+13° 01'	"The Eyes" - an interacting pair. NGC 4438 is an mag. 10.1 spiral. 9.3 x 3.9 min. (110NGC)
	NGC 4517 <sup>1</sup>	12hr 32.8m	+00° 07'	An edge-on Sc spiral. Mag 10.5, 10.2 x 1.9 arc minutes. (110NGC)
	NGC 4526 <sup>1</sup>	12hr 34.0m	+07° 42'	A mag 9.6 E7 elliptical, 7.6 x 2.3 arc minutes. (110NGC)
	NGC 4535 <sup>1</sup>	12hr 34.3m	+08° 12'	A mag. 9.8 Sc spiral, 6.8 x 5.0 arc min, near M49. (110NGC)
	NGC 4567 <sup>1</sup> and NGC 4568 <sup>1</sup>	12hr 36.5m	+11° 15'	The "Siamese Twins" - a pair of interacting Sc spirals. Mag 11, 4.6 x 2.1 arc minutes. (110NGC)
	NGC 4699 <sup>1</sup>	12hr 49.0m	-08° 40'	A small bright Sa spiral, mag 9.6, 3.5 x 2.7 arc min. (110NGC)
	NGC 4762 <sup>1</sup>	12hr 52.9m	+11° 14'	The flattest galaxy known. A mag 10.2 SB0 spiral, 8.7 x 1.6 arc min. (110NGC)
	NGC 5746 <sup>1</sup>	14hr 44.9m	+01° 57'	Sb edge-on galaxy, mag 10.6, 7.9 x 1.7 arc minutes. (110NGC)

## Challenge Objects:

✓	Name	R.A.	Decl.	Details
	3C273	12hr 29.1m	+02° 03'	Appearing as a bluish 12th or 13th mag. variable "star", this quasar is some 2-3 billion light years away. Uranometria pg. 238

Seeing: 0.42  
FOV: 50.42

-Haumea

-NGC 5856

-M53

-M85

-M100

-M99

-M60

NGC 4762

-Eyes

-M49

-IC 3123

M5

-HD122408

Virgo

-NGC 5634

-HD114330

-HD135742

Libra

-HD130841

-HD134759

-NGC 5897

-Me2-1

-Swelling Spiral (M61)

-Saturn

-HD107259

-NGC 4699

-Sombrero Galaxy (M104)

-IC972

-A36

-A65

-M68

-CTIO1230-275

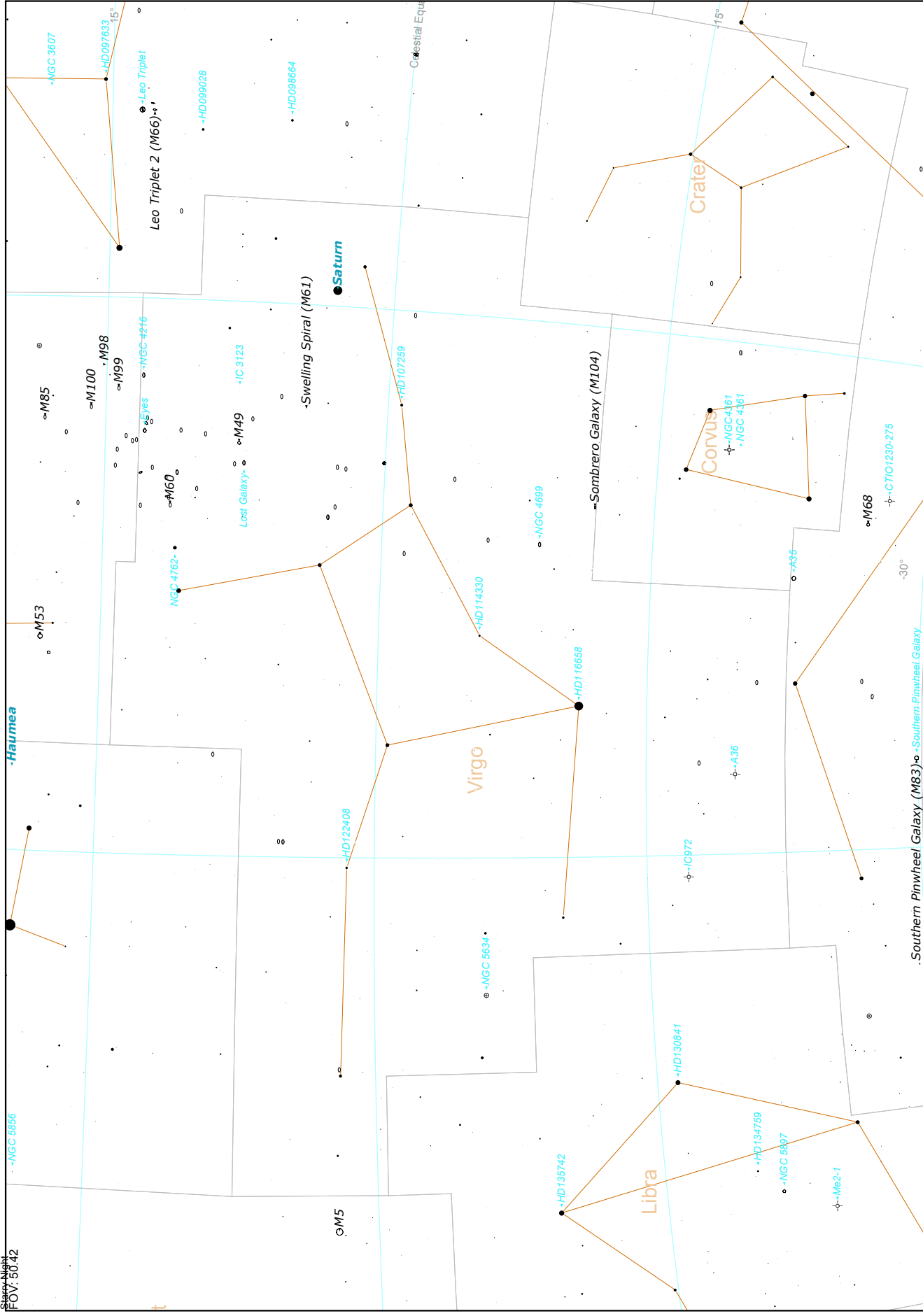
-Southern Pinwheel Galaxy (M83)

-Southern Pinwheel Galaxy

Viewing from Prince George, Canada  
Chart centre (J2000): RA: 13h 14.553m Dec: -4° 46.090'  
Altitude: 31° 13.326', Azimuth: 182° 46.160' (south)

Long: -122° 43' 42" Lat: 53° 55' 09"  
2010/05/15 11:00:08 PM (Local)  
Limiting Magnitude: 6.4

- ☉ Galaxy
- ☉ Globular Cluster
- ☉ Cluster
- ☉ Quasar
- ◉ Variable
- ◉ Multiple
- ◉ Planetary



# Coma Berenices (The Hair of Bernice)

## Naked Eye Objects:

✓	Name	R.A.	Decl.	Details
	Melotte 111	12hr 25m	+25° 43'	The "Coma Berenices Star Cluster" - a large sprawling open cluster 5° in size, 250 LY distant. 37 stars, mag 4.87 and fainter.

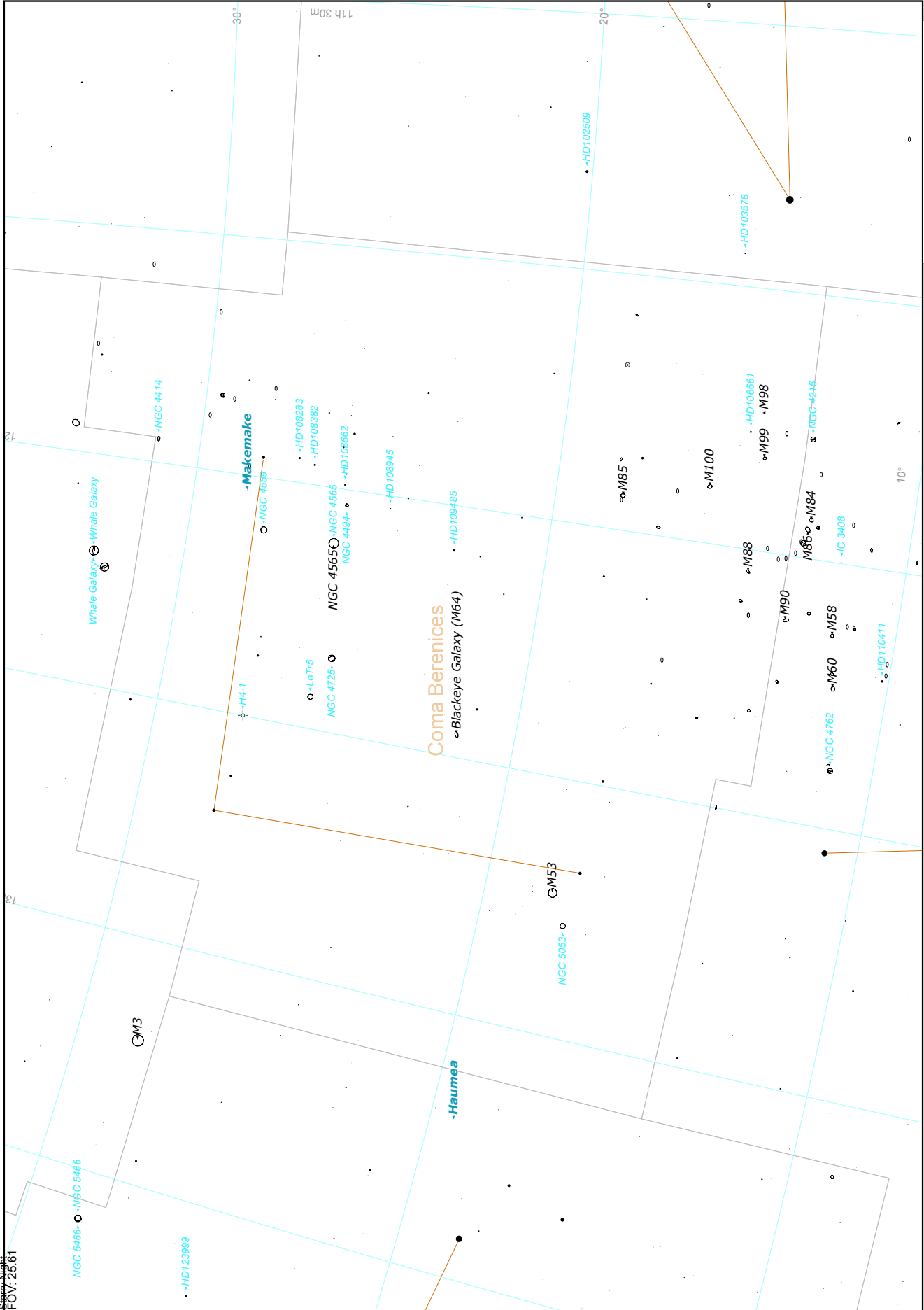
## Small Scope Objects:

✓	Name	R.A.	Decl.	Details
	M53 (NGC 5024)	13hr 12.9m	+18° 10'	The brightest globular in Coma, 1° NE of $\alpha$ Comae. Magnitude 8.7, 14 arc minutes in diameter. First observed by J.E. Bode in February 1775. Partial resolution with a 6" scope.
	M64' (NGC 4826)	12hr 56.7m	+21° 41'	The "Black Eye Galaxy" - an unusual 8th magnitude spiral galaxy, 7.5 x 3.5 arc minutes in size. First observed by J.E. Bode April 4, 1779. An abnormally smooth and featureless galaxy except for a large dark dust cloud near the nucleus, which gives it the appearance of a black eye.
	M85 (NGC 4382)	12hr 25.4m	+18° 11'	A member of the Virgo galaxy cluster, discovered by Mechain in 1781. M85 is a lenticular galaxy, 3 x 2 arc minutes in size, magnitude 10.5.
	M88 (NGC 4501)	12hr 32.0m	+14° 25'	A bright multiple - arm Sb spiral, about 30° from edge-on. Discovered by Messier March 18, 1781. Magnitude 10.5, 5.7 x 2.5 arc minutes.
	M91 (NGC 4548)	12hr 35.4m	+14° 30'	PLACEHOLDER
	M98 (NGC 4192)	12hr 13.8m	+14° 54'	A large, elongated Sb spiral 8 x 2 arc minutes in size. Discovered by Mechain in 1781. Low surface brightness at mag. 11.
	M99 (NGC 4254)	12hr 18.8m	+14° 25'	A bright, circular, face-on Sc spiral. Mag 10.4, 4.5 x 4 arc minutes. Spiral structure visible in 10" and larger scopes under good skies.
	M100 (NGC 4321)	12hr 22.9m	+15° 49'	Another bright mag. 10.4 Sc spiral, 5.2 x 5 arc minutes.

## Big Scope Objects:

✓	Name	R.A.	Decl.	Details
	NGC 4565 <sup>II</sup>	12hr 36.3m	+25° 59'	The best and brightest edge-on spiral. 15.5 x 2.1 arc minutes, magnitude 10.7. Dust lane visible in larger scopes. (110NGC)
	NGC 4725'	12hr 50.4m	+25° 30'	A large, bright barred spiral galaxy. Mag 9.2, 10.8 x 7.6 arc minutes in size. (110NGC)
	NGC 5053	13hr 16m	+17° 41'	A faint, loose globular cluster, 1° S.E. of M53. 8 arc minutes across, magnitude 10.5.
	NGC 4274'	12hr 19.8m	+29° 37'	(110NGC) PLACEHOLDER
	NGC 4414'	12hr 26.4m	+31° 13'	(110NGC) PLACEHOLDER
	NGC 4494'	12hr 31.4m	+25° 47'	(110NGC) PLACEHOLDER
	NGC 4559'	12hr 36.0m	+27° 58'	(110NGC) PLACEHOLDER

Starry Night  
FOV: 25.61



Viewing from Prince George, Canada  
Chart centre (J2000): RA: 12h 47.279m Dec: 21° 53.376'  
Altitude: 57° 9.663', Azimuth: 195° 53.129' (south)

Long: -122° 43' 42" Lat: 53° 55' 09"  
2010/05/15 11:00:08 PM (Local)  
Limiting Magnitude: 7.8

- Galaxy
- Globular Cluster
- Cluster
- Variable
- Multiple
- Planetary
- Quasar