

# 115 Abell Galaxy Cluster 373



Target	Type	RA	Dec.	Constellation	Magnitude	Size	Chart
AGCS 373	Galaxy cluster	03 38.5	-35 27.0	Fornax	-	180'	5.22

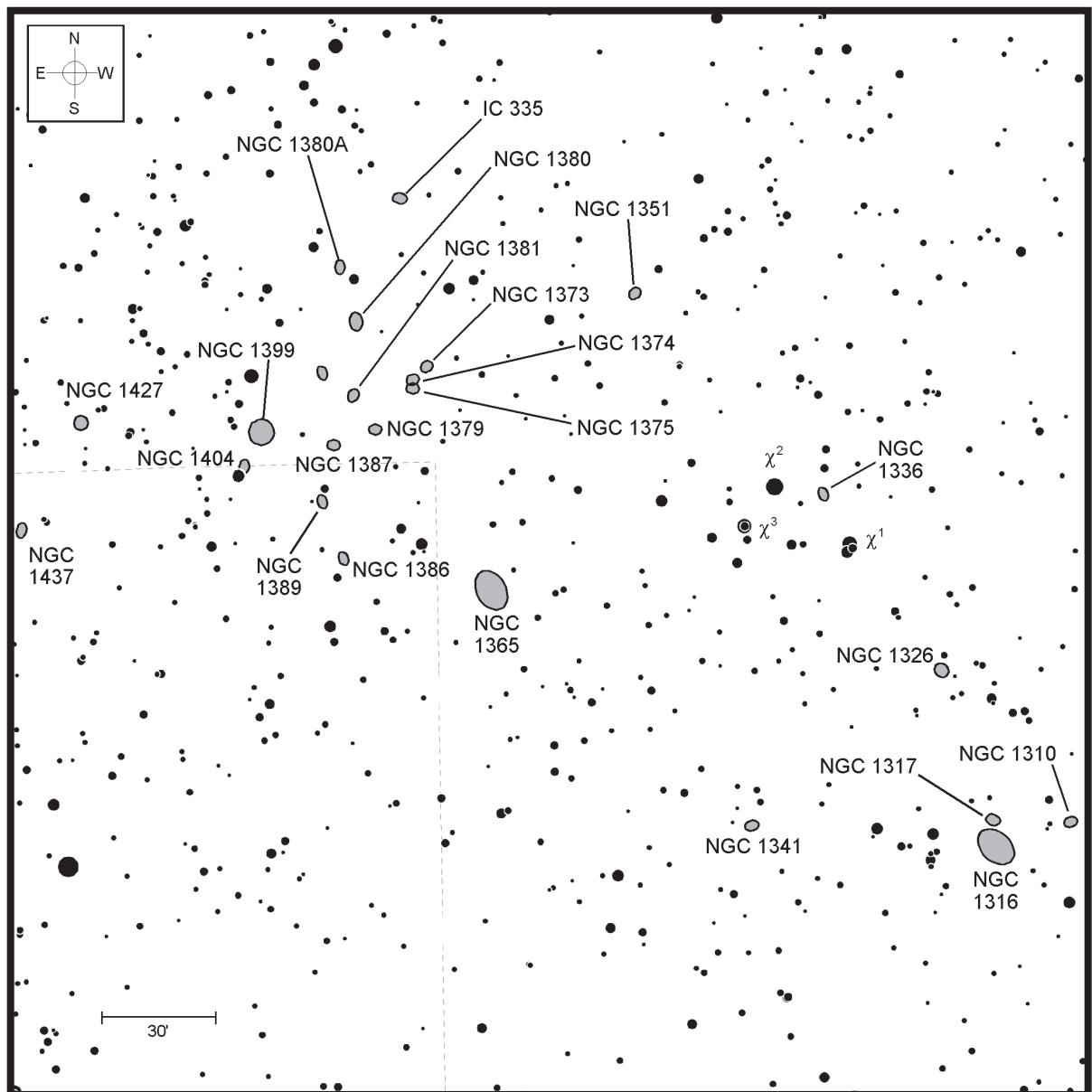


Chart 5.22 Abell Galaxy Cluster (South) 373

Nestled in the southeast corner of the dim early winter constellation Fornax, adjacent to the distinctive triangle formed by 6th-magnitude Chi-1 ( $\chi$  1), Chi-2 ( $\chi$  2), and Chi-3 ( $\chi$  3) Fornacis, is an attractive cluster of galaxies known as Abell Galaxy Cluster – Southern Supplement (AGCS) 373. In addition to his research that led to the discovery of more than 80 new planetary nebulae in the 1950s, George Abell also examined the overall structure of the universe. He did so by studying and cataloging 2,712 galaxy clusters that had been captured on the then-new National Geographic Society–Palomar Observatory Sky Survey taken with the 48-inch Samuel Oschin Schmidt camera at Palomar Observatory. In 1958, he published the results of his study as a paper entitled “The Distribution of Rich Clusters of Galaxies” in the *Astrophysical Journal Supplement*.<sup>7</sup> Although Abell died in 1983, his catalog was expanded in 1989 by Harold Corwin and Ronald Olowin with the publication of their article “A Catalog of Rich Clusters of Galaxies,” again in the *Astrophysical Journal Supplement*.<sup>8</sup> The Corwin/Olowin addendum to Abell’s original catalog encompasses a total of 4,073 rich galaxy clusters.

Also known informally as the Fornax Galaxy Cluster, AGCS 373 lies nearby, as galaxy clusters go, at an estimated distance of 62 million light years. At least 18 of its members are within range of 6- to 9.25-inch telescopes.

Let’s start with two of the most interesting. In 1966, American astronomer Halton Arp published his monumental *Atlas of Peculiar Galaxies*, a photographic survey of oddball galaxies that he made with the 200-inch Hale reflecting telescope and the 48-inch Schmidt telescope at Palomar between 1961 and 1966. The Arp catalog’s 338 entries comprise a fascinating collection of interacting and merging galaxies. Most of the Arps are in the realm of large and giant backyard scopes, although a dozen entries involve Messier objects.<sup>9</sup>

Arp 154 involves two of the galaxies within the Fornax cluster. NGC 1316, at 9th magnitude the brightest galaxy in the bunch, is set in the group’s

western suburbs. Deep photographs reveal that NGC 1316 contains many dust clouds and is surrounded by a complex envelope of faint material, several loops of which appear to engulf a smaller galaxy, NGC 1317, 6’ to the north. Astronomers consider this to be a case of galactic cannibalism, with the larger NGC 1316 devouring its smaller companion. The merger is further signaled by strong radio emissions being telegraphed from the scene.

In my 8-inch reflector, NGC 1316 appears as a bright, slightly oval disk with a distinctly brighter nucleus. NGC 1317, about 12th magnitude and 2’ across, is visible in a 6-inch scope, although averted vision may be needed to pick it out. Try about 150× for the best view.

With NGC 1317 centered in your field, turn off your telescope drive and wait 5 minutes. The Earth will turn your view eastward to NGC 1341, a challenging 12th-magnitude barred spiral. I could only see it fleetingly with my 8-inch reflector from a dark site on the south shore of Long Island, New York. Its featureless disk, only  $1\frac{1}{2}$ ’ long, is just north of a faint star.

There is another barred spiral, NGC 1326, about halfway between NGC 1316 and Chi-1. In the 8-inch, it appeared as an 11th-magnitude oval smudge visually measuring about 2’ long and half as wide. It also has a stellar nucleus centered within.

The heart of the Fornax cluster lies at right ascension 03h 38.5m, declination  $-35^{\circ} 27.0'$ , halfway between the Chi Fornacis triangle to the west and Sigma ( $\sigma$ ) Eridani to the east. A telescope with a  $1^{\circ}$  field aimed toward this position will embrace eight galaxies brighter than 14th magnitude, with 10th-magnitude elliptical NGC 1399 lying dead center (Figure 5.22). This galaxy, set 15’ south of a 7th-magnitude field star, appears as a perfectly round glow 2’ in diameter with a brighter nucleus.

NGC 1404, another 10th-magnitude elliptical, is just 10’ south and slightly east of NGC 1399. I found it slightly oval with its long axis stretching 2’. Like many of the galaxies in this cluster, NGC 1404 has a brighter nucleus. Another 20’ west-southwest of NGC 1399 lies NGC 1387. I was surprised at how bright this spiral appeared in my 8-inch, considering it is listed as magnitude 11.7 in blue light.

NGC 1389 is 14’ south and a bit east of NGC 1387, just over the border into Eridanus. Averted vision is a must for any scope smaller than 10 inches. Most references label this 2’-long elliptical as 12th

<sup>7</sup> George O. Abell, “The Distribution of Rich Clusters of Galaxies,” *Astrophysical Journal Supplement*, Vol. 3 (1958), p. 211.

<sup>8</sup> George O. Abell, Harold G. Corwin Jr., and Ronald P. Olowin, “A Catalog of Rich Clusters of Galaxies,” *Astrophysical Journal Supplement Series*, Vol. 70 (1989), pp. 1–138.

<sup>9</sup> M32 (Arp 168), M49 (Arp 134), M51 (Arp 85), M60 (Arp 116), M65 (Arp 317), M66 (Arp 16 and Arp 317), M77 (Arp 37), M82 (Arp 337), M87 (Arp 152), M90 (Arp 76), and M101 (Arp 26).

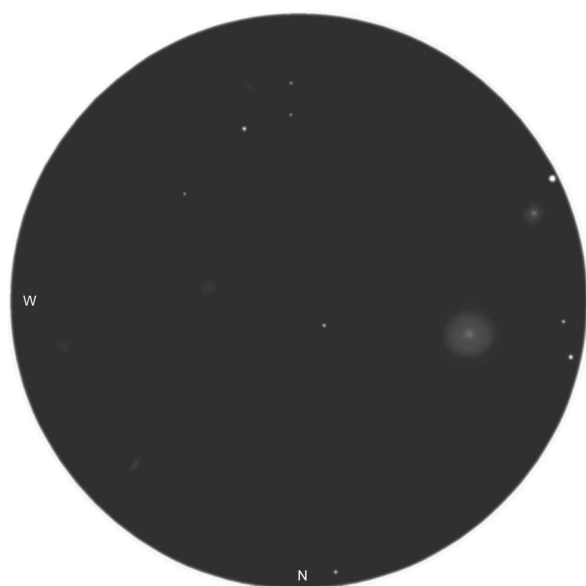


Figure 5.22 NGC 1399

magnitude, but I estimate it to be a half magnitude fainter. Somewhat brighter and larger is the elliptical NGC 1386, found about 15' south-southwest of NGC 1389 and set a bit deeper into Eridanus. At 120 $\times$ , I saw its brighter nucleus.

Moving back to NGC 1387, you can sweep 14' north-northwest to NGC 1381, a faint, 12th-magnitude, cigar-shaped elliptical 2' long. About the same distance west-northwest of NGC 1387 is another 12th-magnitude galaxy, NGC 1379. It appears as a circular glow about 1' across.

NGC 1374 measures just 2 in diameter, but should be visible in a good 4-inch scope. Can you see NGC 1375 located just 2' to its south? It's a magnitude fainter, so a 6-inch might be required. A third, fainter smudge is an equal distance to the north of NGC 1374. That's NGC 1373, a tough target in a 6-inch.

A 4-inch, however, should show the long, thin disk of NGC 1380 to the northeast of the NGC 1374 trio. Because of its distinctive lenticular shape, this 11th-magnitude galaxy is an intriguing target for astrophotographers.

Another object with a pronounced shape is the barred spiral NGC 1365, which, at 10th magnitude, is

Table 5.5 Members of AGCS 373 (bold entries are discussed in the text)

Object	RA	Dec.	Magnitude	Size
NGC 1310	03 21.1	-37 06.1	12.6b	1.9' $\times$ 1.5'
<b>NGC 1316</b>	<b>03 22.6</b>	<b>-37 12.8</b>	<b>9.4b</b>	<b>11.1' <math>\times</math> 7.2'</b>
<b>NGC 1317</b>	<b>03 22.7</b>	<b>-37 06.2</b>	<b>11.9b</b>	<b>2.5' <math>\times</math> 2.2'</b>
<b>NGC 1326</b>	<b>03 23.9</b>	<b>-36 27.9</b>	<b>11.4b</b>	<b>3.9' <math>\times</math> 2.8'</b>
NGC 1336	03 26.5	-35 42.8	13.1b	2.1' $\times$ 1.4'
<b>NGC 1341</b>	<b>03 28.0</b>	<b>-37 09.0</b>	<b>12.3</b>	<b>1.5' <math>\times</math> 1.2'</b>
NGC 1351	03 30.6	-34 51.2	11.5	2.8' $\times$ 1.7'
NGC 1350	03 31.1	-33 37.7	11.2b	5.8' $\times$ 2.7'
<b>NGC 1365</b>	<b>03 33.6</b>	<b>-36 08.3</b>	<b>10.3b</b>	<b>11.3' <math>\times</math> 6.6'</b>
<b>NGC 1373</b>	<b>03 35.0</b>	<b>-35 10.3</b>	<b>13.3</b>	<b>1.1' <math>\times</math> 1.0'</b>
<b>NGC 1374</b>	<b>03 35.3</b>	<b>-35 13.6</b>	<b>11.1</b>	<b>2.5' <math>\times</math> 2.4'</b>
<b>NGC 1375</b>	<b>03 35.3</b>	<b>-35 16.0</b>	<b>12.4</b>	<b>2.2' <math>\times</math> 0.9'</b>
IC 335	03 35.5	-34 26.8	12.9p	2.5' $\times$ 0.6'
<b>NGC 1379</b>	<b>03 36.1</b>	<b>-35 26.5</b>	<b>11.8b</b>	<b>2.3' <math>\times</math> 2.3'</b>
<b>NGC 1380</b>	<b>03 36.4</b>	<b>-34 58.6</b>	<b>10.9b</b>	<b>4.8' <math>\times</math> 2.7'</b>
<b>NGC 1381</b>	<b>03 36.5</b>	<b>-35 17.7</b>	<b>11.5</b>	<b>2.3' <math>\times</math> 0.7'</b>
NGC 1380A	03 36.8	-34 44.4	12.4	2.6' $\times$ 0.8'
<b>NGC 1386</b>	<b>03 36.8</b>	<b>-36 00.0</b>	<b>12.1b</b>	<b>3.4' <math>\times</math> 1.3'</b>
<b>NGC 1387</b>	<b>03 37.0</b>	<b>-35 30.4</b>	<b>11.7b</b>	<b>2.8' <math>\times</math> 2.6'</b>
<b>NGC 1389</b>	<b>03 37.2</b>	<b>-35 44.8</b>	<b>12.4b</b>	<b>2.2' <math>\times</math> 1.3'</b>
<b>NGC 1399</b>	<b>03 38.5</b>	<b>-35 27.0</b>	<b>10.6b</b>	<b>6.9' <math>\times</math> 6.4'</b>
<b>NGC 1404</b>	<b>03 38.9</b>	<b>-35 35.6</b>	<b>10.0</b>	<b>3.4' <math>\times</math> 3.0'</b>
NGC 1427	03 42.3	-35 23.6	11.8b	3.6' $\times$ 2.4'
NGC 1437	03 43.6	-35 51.2	12.4b	2.9' $\times$ 1.9'

the third brightest member of the Fornax cluster. Visually it appears as an oval nebulous patch that grows steadily brighter toward its center. Photographically it is one of the most impressive examples of a barred spiral south of the celestial equator. It has long curving arms that extend north and south from a pronounced central bar running east and west.

Table 5.5 lists these as well as several other galaxies in the area that are within range of amateur telescopes. Be sure to pay homage to each.