

## Caldwell Observation

- 1 NGC 188 Cep Open Cluster I 2 r CL,VL,R,150-200\***  
 Nov 11 2020 36" 31mmT5 (II 1 r),VB,EL,>100 \*S, SIM MAG,WELL PLACED IN FOV,CL,(10:31pm),R=FG  
 Jul 09 1983 12.5" 24mm MF,PL,~50\*S SC,F BG GLOW OF MANY \*S
- 2 NGC 40 Cep H58-4 Planetary Neb 3b+3 F,VS,R,VSMBM,\*12SP**  
 Sep 02 2008 31" 17mmT4 PB,ML,OVAL,LAYERS OF RINGS DET,B CNTR\*,GREENISH,F\* ON EDGE,OIII NO HELP,R=E  
 Jul 09 1983 12.5" 12mm MB,PS,BNEC,B CNTR \*,SHARP EDGES,R  
 Aug 13 1982 12.5" 16mm BG COLOR,MF,PS,R,B CNTR \*,(10TH MAG),SIM TO BLINKING PL,F\*W SIDE  
 Aug 13 1982 12.5" 7mm EL STARTING TO SHOW UP
- 3 NGC 4236 Dra H51-5 Galaxy SB(s)dm VF,EL,ME160,VGBM**  
 Apr 23 2003 12.5" 9mmT6 DIF,MF,EL-PATCH,LG,PATCHES DET,H2 RGN SUSP,R=G
- 4 NGC 7023 Cep H74-4 Brt Nebula R \*7IN EF,EL,NEBY**  
 Sep 12 2012 36" 17mmT4 PB,VL,3\*S WITH NEB,FINE DETAIL IN WISP OF NEB,GREENISH,OIII NO HELP,PATCHES,DRK  
 AREAS,PAIR=CR 427,R=G  
 Jul 09 1983 12.5" 12mm DIF,MB,MS,GAS SUR B\*,SOME DETAIL IN GAS DET
- 5 IC 342 Cam Galaxy SAB(rs)cd**  
 Jan 30 2003 12.5" 9mmT6 PB,EL,R,BNUC,SHISB,FACE ON,SPR STR SUSP,HALO OF ARMS,NUC R & B,HINT OF H2 RGN  
 SUSP,R=E
- 6 NGC 6543 Dra H37-4 Planetary Neb 3a+2 PLN,VB,PS,SBMVSN**  
 May 19 2009 31" 17mmT4 VB,VL,B GREENISH,CNTR\* 10TH MAG,B INNER CORE,GRAN BALL,VF WISPS OF NEB SUR  
 BALL,OIII BRINGS OUT OUTER HALO ONLY,PAIR=IC4677,R=E  
 Mar 26 2006 31" 17mmT4 VF,PL,B BLUE,CNTR \*,DETAIL IN NEB,DARK INNER RING,PAIR=IC4677,R=E  
 Jun 23 2003 12.5" 9mmT6 VB,ML,EL-OVAL,VHISB,BNUC,SLT EL,F HALO SUR GLXY,R=E  
 Jul 22 1981 12.5" 16mm BLUEISH IN COLOR,PB,MS,NO CNTR \* DET  
 Jul 14 1980 12.5" 24mm  
 Jul 11 1980 12.5" 24mm  
 Jun 20 1980 12.5" 24mm
- 7 NGC 2403 Cam H44-5 Galaxy Sc CB,EL,VME,VGMBMN**  
 Dec 21 1981 12.5" 16mm SPR STR DET,BEAUTIFUL!!!  
 Dec 21 1981 12.5" 24mm PB,PL,HISB,BSNUC,L OVAL PATCH,SOME STR SUSP,B\*S IN GLXY  
 Sep 18 1980 12.5" 24mm 2\*S IN GLXY PRESENT
- 8 NGC 559 Cas H48-7 Open Cluster I 1 m CL,B,PL,PRI**  
 Jul 31 1981 12.5" 24mm FEW B\*S, MOSTLY FTR \*S ~10...11 MAG,~50\*S IN ALL
- 9 SH2 155 Cep Brt Nebula**  
 Sep 02 2008 31" 31mmT5 EDIF,EF,EEL,PATCH,SVRL FOV,FEW B PATCHES DET,VF BG GLOW AREAS,R=P
- 10 NGC 663 Cas H31-6 Open Cluster II 3 r CL,B,L,ERI,ST PL**  
 Jul 31 1981 12.5" 16mm PL,CL BROKEN IN HALF,DARK PATCH THROUGH CL
- 11 NGC 7635 Cas H52-4 Brt Nebula E VF,\*8INV L EXCENTRIC**  
 Jul 31 1981 12.5" 16mm VDIF,IRR IN SHAPE,NEB SUR B\*,BUBBLE NEB
- 12 NGC 6946 Cep H76-4 Galaxy SAB(rs)cd VF,VL,VG,VSBM,RR**  
 Sep 12 2012 36" 17mmT4 PB,VL,BSNUC,SPR ARMS,KNOTS IN ARMS DET,H2 RGN DET,R=E  
 Jun 22 2003 12.5" 9mmT6 VB,EL,R,NND,SHISB,AREAS OF PATCHES DET,SVRL \*S IN GLXY,R=E  
 Jul 09 1983 12.5" 24mm MF,VL,OVAL,3B\*S TO ONE SIDE,SVRL F\*S IN GLXY,SPR STR SUSP,PAIR/6939  
 Aug 14 1982 12.5" 16mm EDIF,MF,PL,PATCHY,OVAL,NND,\*S IN GLXY,SEE CARD FOR DRAWING

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<b>12</b>	<b>NGC 6946</b>	<b>Cep H76-4</b>	<b>Galaxy SAB(rs)cd</b>	<b>VF,VL,VG,VSBM,RR</b>
Jun 06 1981	12.5"	16mm	DIF,VL,MB,SOME SPR STR DET,FACE ON,SEVEAL *S IN GLXY,RESEMBLES M33	
Aug 19 1980	12.5"	32mm	VF,COULD NOT FIND IN 24MM	
<b>13</b>	<b>NGC 457</b>	<b>Cas H42-7</b>	<b>Open Cluster II 3 r</b>	<b>CL,B,L,PRI,*7,8,10</b>
Jul 31 1981	12.5"	16mm	B*S,FEW *S ~20,L SC THRUT EYEPIECE	
Jul 17 1980	12.5"	24mm		
<b>14A</b>	<b>NGC 869</b>	<b>Per H33-6</b>	<b>Open Cluster I 3 r</b>	<b>CL,VVL,VRI,*7...14</b>
Oct 03 1981	12.5"	32mm	VB,EL,B DIAMOND SHAPE *S IN CNTR,PAIR/884	
Sep 20 1981	12.5"	24mm		
Oct 31 1980	12.5"	24mm		
Sep 18 1980	12.5"	24mm	H & CHI DBL CL	
Jun 20 1980	12.5"	24mm		
<b>14B</b>	<b>NGC 884</b>	<b>Per H34-6</b>	<b>Open Cluster I 3 r</b>	<b>CL,VL,VRI,RUBY*M</b>
Oct 03 1981	12.5"	32mm	VB,EL,PAIR/869,BEST IN 2" EYEPIECE	
Sep 20 1981	12.5"	24mm		
Oct 31 1980	12.5"	24mm		
Sep 18 1980	12.5"	24mm	H & CHI DBL CL	
Jun 20 1980	12.5"	24mm		
<b>15</b>	<b>NGC 6826</b>	<b>Cyg H73-4</b>	<b>Planetary Neb 3a+2</b>	<b>PLN,B,PL,R,*11M</b>
Sep 02 2008	31"	17mmT4	VB,VL,R,GREENISH TECTURE B BALL,CNTR* 10TH MAG,OIII NOT MUCH HELP,R=E	
Jul 24 1981	12.5"	7mm	CNTR * NO LONGER BLINKS	
Jul 24 1981	12.5"	16mm	GREENISH,BLINKING PLANTARY,CNTR* EASILY BLINKS WHEN LOOKING AT CNTR	
Jun 20 1980	12.5"	9mm	B CNTR * EASILY SEEN	
Jun 17 1980	12.5"	16mm	GREAT,GREENISH BLUE COLOR,USE BARLOW AND 16MM	
<b>16</b>	<b>NGC 7243</b>	<b>Lac H75-8</b>	<b>Open Cluster II 2 m</b>	<b>CL,L,P,LC,ST VL</b>
Sep 20 1984	12.5"	24mm	VB,VL,RICH * FIELD,PPEARS TO BE 2 CL,S SIDE BY SIDE,~40*S	
Jul 15 1980	12.5"	24mm	CL WELL PLACED	
<b>17</b>	<b>NGC 147</b>	<b>Cas</b>	<b>Galaxy E5 pec</b>	<b>VF,VL,IR,GSMBM*11</b>
Sep 28 2013	36"	17mmT4	MF,EL-OVAL,VSNUC,DIF F HALO ACROSS FOV,MANY F*S IN HALO,B*S IN NUC AREA,R=FG	
Jul 31 1981	12.5"	24mm	EL,VDIF,UB,DWARF SATELLITE TO M31	
Jul 15 1980	12.5"	24mm	EF,VS,THIN	
<b>18</b>	<b>NGC 185</b>	<b>Cas H707-2</b>	<b>Galaxy E3 pec</b>	<b>PB,VL,IR,VGMBM,R</b>
Sep 28 2013	36"	17mmT4	PB,PL,OVAL,UB,MHISB,SVRL VF* IN GLXY AREA,R=G	
Jul 31 1981	12.5"	24mm	DIF,SETLLAR NUC,DIF HALO,R TO OVAL IN SHAPE	
Sep 18 1980	12.5"	24mm		
Aug 22 1980	12.5"	24mm		
Aug 19 1980	12.5"	24mm		
Jul 17 1980	12.5"	24mm		
Jul 15 1980	12.5"	24mm	DIF,EF,PL,AV	
<b>19</b>	<b>IC 5146</b>	<b>Cyg</b>	<b>Brn Nebula E</b>	
Sep 18 2004	31"	25mm	VDIF,VF,PL,HINT OF NEB DET,S CL OF ~6*S,OIII DOES NOT HELP,R=P	
<b>20</b>	<b>NGC 7000</b>	<b>Cyg H37-5</b>	<b>Brn Nebula E</b>	<b>F,EEL,DIF NEBULOSITY</b>
Sep 19 2012	36"	31mmT5	VB,W/OIII,ABLE TO SLEW ENTIRE OUTLINE OF NA NEB,NUMEROUS AREAS OF FINE NEB	

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<b>20</b>	<b>NGC 7000</b>	<b>Cyg H37-5</b>	<b>Brn Nebula E</b>	<b>F,EEL,DIF NEBULOSITY</b>
			DETAIL,GULF AND S END OF MEX BEST CONTRAST,NICE D* IN MEX TIP - PINK & BLUEISH,R=EE	
Aug 13 1982	12.5"	32mm	FITS WELL IN EYEPIECE,FIRST TIME SEEN THIS WELL, IMPRESSIVE!!!	
Aug 11 1982	12.5"	32mm	EL,ONLY SERTAIN OUTLINES DET,HUNDREDS OF **S WITH COSTAL LINE EFFECT	
<b>21</b>	<b>NGC 4449</b>	<b>CVn H213-1</b>	<b>Galaxy IBm</b>	<b>VB,CL,ME,DORBIFID,*F</b>
Jan 28 1982	12.5"	7mm	*NUC,ANOTHER F* JUST W OF NUC	
Jan 28 1982	12.5"	16mm	DIF,PB,PL,EL,FNUC,F* IN W EDGE NEAR NUC,HISB,GMBM,F* FURTHER W	
<b>22</b>	<b>NGC 7662</b>	<b>And H18-4</b>	<b>Planetary Neb 4+3</b>	<b>PLN ORRING,VB,PS,R</b>
Sep 02 2008	31"	17mmT4	VB,ML,OVAL-R,B GREENISH,B INNER RING NOT SYM,B GREENISH EDGES IN SPOTS,CNTR* 14TH MAG,R=E	
Aug 31 1984	12.5"	12mm	MB,VS,VR,UNIFORM BLUEISH COLOR,* CLOSE BY	
Sep 23 1981	12.5"	16mm	B BLUEISH GREEN,UB,R WITH FUZZY EDGES,NO CNTR *,MB,PS,15* SW	
Jul 15 1980	12.5"	24mm		
<b>23</b>	<b>NGC 891</b>	<b>And H19-5</b>	<b>Galaxy SA(s)b? sp</b>	<b>B,VL,VME22</b>
Aug 31 1984	12.5"	16mm	MF,ML,EDGE ON,S ARM BTR THAN N,DUST LANE DET,CNTR BULGE DET	
Sep 23 1981	12.5"	24mm	F* 13MAG NW SIDE, FTR * TO S TIP OF ARM,BULGE DET,ML,MB, EDGE ON	
Sep 20 1981	12.5"	24mm		
Sep 10 1980	12.5"	24mm		
Aug 22 1980	12.5"	24mm		
Jul 24 1980	12.5"	32mm	BEAUTIFUL!!!,DUST LANE VISIBLE	
Jul 17 1980	12.5"	24mm		
Jul 11 1980	12.5"	24mm		
<b>24</b>	<b>NGC 1275</b>	<b>Per H603-2</b>	<b>Galaxy Pec</b>	<b>F,S</b>
Sep 12 2002	12.5"	9mmT6	PB,PL,BNUC,GMBM,OVAL,LNUC,HISB,ABELL426	
Aug 25 1982	12.5"	16mm	MB,ML,FNUC,F*N AND W,GMBM,R-OVAL,2 OTHER GLXY CLOSE BY/1272 AND 1278	
<b>25</b>	<b>NGC 2419</b>	<b>Lyn H218-1</b>	<b>Globular II</b>	<b>PB,PL,LE90,VGBM,*4'F</b>
Feb 21 2020	36"	17mmT4	(Class XI),MB,PL,OVAL-R,UB,V LTL CL IN CNTR,E FOV W/B* CLOSE BY,R=G	
Oct 16 1982	12.5"	16mm	MF,PL,R,UB,SBM,2 B*S POINT TO IT,COUPLE OF F*S SC SUR OBJECT	
<b>26</b>	<b>NGC 4244</b>	<b>CVn H41-5</b>	<b>Galaxy SA(s)cd: sp</b>	<b>PB,VL,EE43,VGBM</b>
Jan 26 1982	12.5"	24mm	PB,VL,EDGE ON,* ON N TIP,NND,HISB,UB,TAPERED AT BOTH ENDS	
Oct 31 1980	12.5"	24mm		
<b>27</b>	<b>NGC 6888</b>	<b>Cyg H72-4</b>	<b>Brn Nebula E</b>	<b>F,VL,VME,**ATT</b>
Sep 19 2012	36"	31mmT5	VB,W/OIII,WELL PLACED IN FOV,2 DISTINCT HALVES,ONE BTR THAN OTHER,L LOBS,E DETAIL,AMAZING,R=EE	
Sep 04 2002	12.5"	32mm	NEB EASILY DET	
Sep 04 2002	12.5"	25mm	PB,PL,B NEB,2B*S WITH GLOW OF NEB BET AND SUR *S	
<b>28</b>	<b>NGC 752</b>	<b>And H32-7</b>	<b>Open Cluster II 2 r</b>	<b>CL,VVL,RI,*L\$SC</b>
Aug 31 1984	12.5"	24mm	SAME	
Aug 13 1982	12.5"	24mm	VB,EL,MANY *S,OVERFILLS 24MM FIELD,BEST IN 8X50 FINDER,R,SC	
Sep 10 1980	12.5"	24mm		
<b>29</b>	<b>NGC 5005</b>	<b>CVn H96-1</b>	<b>Galaxy SAB(rs)bc</b>	<b>VB,VL,VME66,VSBMN</b>
Jan 28 1982	12.5"	16mm	MB,ML,BNUC,SLENDER SHAPE,DIF HALO	
<b>30</b>	<b>NGC 7331</b>	<b>Peg H53-1</b>	<b>Galaxy SA(s)b</b>	<b>B,PL,PME163,SMBM</b>

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<b>30</b>	<b>NGC 7331</b>	<b>Peg H53-1</b>	<b>Galaxy SA(s)b</b>	<b>B,PL,PME163,SMBM</b>
Sep 17 2003	31"	25mm	EB,EL,EDGE ON,BNUC,HISB,TIGHT BNUC,DUST LANE,COMP DET,7331 CL,R=E	
Jun 27 2003	12.5"	9mmT6	EB,EL,BNUC,VHISB,DUST DET,BLNUC,F HALO & ARMS,OTHERS PRESENT,R=E	
Sep 01 2002	12.5"	12mm	SAME	
Sep 21 1984	12.5"	12mm	MB,ML,EDGE ON,SAME,COMP CLOSE BY	
Jul 06 1983	12.5"	16mm	MB,PL,EDGE ON,BLNUC,TAPERED ENDS,DUST LANE SUSP IN 12MM	
Sep 18 1982	12.5"	16mm	MB,ML,EDGE ON,BNUC,DUST LANE SUSP,TAPERED ENDS,7335 CLOSE BY	
Jul 29 1981	12.5"	24mm	SAME,3 COMP GLXY SEEN,7335/7336/7340	
Jul 07 1981	12.5"	24mm	PB,PL,EDGE ON,BNUC,DIM AREA	
Sep 18 1980	12.5"	24mm		
Sep 10 1980	12.5"	24mm		
Sep 07 1980	12.5"	24mm		
Jul 17 1980	12.5"	24mm		
Jul 15 1980	12.5"	24mm		
Jul 12 1980	12.5"	24mm		
Jul 11 1980	12.5"	24mm		
Jun 20 1980	12.5"	24mm		
Jun 17 1980	12.5"	24mm	TWILIGHT STARTING,OBJECT WASHED OUT	
<b>31</b>	<b>IC 405</b>	<b>Aur</b>	<b>Brn Nebula E</b>	
Dec 03 1980	12.5"	32mm	EL AREA,VOID AREA,MOVE TO N RIM,HINT OF B AREAS	
<b>32</b>	<b>NGC 4631</b>	<b>CVn H42-5</b>	<b>Galaxy SB(s)d sp</b>	<b>VB,VL,EE70,BMN,*ATTN</b>
Mar 17 2007	31"	17mmT4	EB,EL,EL,HISB,ONE SIDE THICKER,MILKY,BH2 RGN,DUST,F* OFF NUC/TIP,R=E	
Jan 28 1982	12.5"	12mm	VB,VL,EDGE ON,* N OF NUC,F* W TIP,MHISB,PATCHES DET IN EQ PLANE	
<b>33</b>	<b>NGC 6992</b>	<b>Cyg H14-5</b>	<b>Brn Nebula E</b>	<b>EF,EL,EE,EIF,BIFID</b>
Sep 26 2019	36"	17mmT4	W/OIII,EB,EEL,HISB,5 FOV'S,LOOKS MUCH LIKE 6960,BFILIMENTS,STRANDS,STRINGY ROPES V HISB,BNEON GLOW,R=EEEE	
Sep 04 2002	12.5"	32mm	VB,EEL,SNR,HISB,ARC GOES 2 FOV'S	
<b>34</b>	<b>NGC 6960</b>	<b>Cyg H15-5</b>	<b>Brn Nebula E</b>	<b>PB,CL,EIF,KAPPACYGIN</b>
Sep 26 2019	36"	17mmT4	W/OIII,EB,EEEL,HISB,5 FOV'S,START AT EASTERN MOST PART,NEON LIGHT LIKE,STRANDS,EDGES VB,TWISTED ROPE,BEST TO DATE,VIEWED THE OTHER NON-IDENTIFIED AREAS LISTED IN MEGASTAR,SOME WERE VF AND S BUT DET,SOME VB AND VL,HISB,R=EEE	
Sep 04 2002	12.5"	32mm	PB,EL,SNR,WHIPS ON BOTH SIDES OF B* EASILY DET,PARTS OF SNR HAVE HISB	
<b>36</b>	<b>NGC 4559</b>	<b>Com H92-1</b>	<b>Galaxy SAB(rs)cd</b>	<b>VB,VL,ME150,GBM,3*F</b>
Feb 21 2020	36"	17mmT4	VB,VL,EL-OVAL,?NUC,PATCHY,BROKEN PARTS,GRAN,R=GE,TIME 2:19AM	
Mar 17 2018	36"	17mmT4	VB,VL,OVAL,PATCH,NND,BROKEN PATCHES,MHISB IN ARMS,3**S TRIANGLE OUTER EDGE,R=E	
Feb 12 1983	12.5"	24mm	VB,VL,3F**S IN S EDGE,SLT EL,HISB,NND	
<b>37</b>	<b>NGC 6885</b>	<b>Vul H20-8</b>	<b>Open Cluster III 2 m</b>	<b>CL,VB,VL,RI,LC,*6.11</b>
Sep 19 1984	12.5"	16mm	SAME,MB,PL,B* CLOSE TO CNTR	
Jul 06 1983	12.5"	24mm	MB,VS,JUST N OF 6885,B* IN OBJECT,~15 **S,OBLONG IN SHAPE	
Aug 13 1982	12.5"	24mm	EB,EL,OVERFILLS EYEPIECE FOV,SVRL B**S	
Jul 30 1981	12.5"	12mm	VB,VL,B* IN CNTR OF CL,~15-20**S	
<b>38</b>	<b>NGC 4565</b>	<b>Com H24-5</b>	<b>Galaxy SA(s)b? sp</b>	<b>B,EL,EE135,VSBMN=*10</b>
Mar 17 2018	36"	17mmT4	EB,EEL,EDGE ON,BNUC,HISB,ABSOLUTELY AMAZING,DUST LANE THROUGH NUC RGN AND BEYOND,S BNUC ONE SIDE OF DUST, EDGE TO EDGE,R=EE	

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- 38 NGC 4565 Com H24-5 Galaxy SA(s)b? sp B,EL,EE135,VSBMN=\*10**  
 Feb 05 2005 31" 31mmT5 EB,EL,EDGE ON,BNUC,BTR THAN 17MM,JUST FITS IN FOV,DUST LANE,BEST TO DATE,R=E  
 Feb 05 2005 31" 17mmT4 EB,EEL,EDGE ON,BLNUC,HISB,FILLS FOV,2 HALVES,GMBM,TAPERED ENDS,R=E  
 Feb 27 1982 12.5" 16mm MB,PL,V EDGE ON,BNUC,DIM HALO,F\*N OF NUC,DUST LANES,CNTR BULGE,!!!  
 Mar 27 1981 12.5" 24mm
- 39 NGC 2392 Gem H45-4 Planetary Neb 3b+3b B,S,R,\*9M,\*8NF100"**  
 Nov 22 2006 12.5" 12mmT4 EB,VL,B CNTR \* GOES AWAY WITH AV,B BLUE BALL,PATCHY AREAS DET OUTER,R=E  
 Dec 04 2004 31" 17mmT4 VB,VL,WITH OIII,CNTR \* EASY,RINGS SUR CNTR \*,DARK RINGS BET OUTER NEB LOOKS  
 MATTED,B BLUE,BEST EVER SEEN TO DATE,R=E  
 Feb 21 1984 12.5" 12mm MB,PS,ESKIMO NUBULA,CNTR \* EASILY DET,PATCHED IN NEB DET,FORMS TRI W2\*S  
 Oct 23 1982 12.5" 12mm CNTR \* DET,SOME DARK AREAS IN GAS DET  
 Oct 16 1982 12.5" 12mm BLUE,MF,VS,R,UB,NO CNTR \*  
 Oct 31 1980 12.5" 24mm ESKIMO NEB,NON STELL,GREAT!!
- 40 NGC 3626 Leo H52-2 Galaxy S0-a B,S,VLE,SBM**  
 Mar 21 2020 36" 17mmT4 EB,EL-OVAL,VBLNUC,VHISB,HISB HALO,GRAN,VBLNUC,VHISB CNTR,SUDLY VBM,R=E  
 Mar 03 1984 12.5" 12mm MB,PS,BNUC,R,BM  
 Jan 30 1981 12.5" 24mm VB,PS,BNUC,PAIR/M65/M66/3628
- 41 MEL 25 Tau Open Cluster**  
 Mar 17 2010 12" 32mm VB,EEL,SVRL FOV'S,\*S VAR MAG,~200\*S,LOOSLY SC,M CL,R=F
- 42 NGC 7006 Del H52-1 Globular I B,PL,R,GBM**  
 Jul 01 2019 36" 17mmT4 (Class III),PB,ML,OUTER \*S RSLV,L MHSB CORE,PAIR=PGC 65907,R=G  
 Jul 31 2002 12.5" 12mm SAME  
 Jul 08 1983 12.5" 12mm DIF,MF,MS,FNUC,R,SBM,SOFT GLOW  
 Jul 30 1981 12.5" 24mm BNUC,NO \*S IN HALO SEEN,R,S VDIF
- 43 NGC 7814 Peg H240-2 Galaxy SA(s)ab: sp CB,CL,E,VGBM**  
 Sep 21 1984 12.5" 16mm MB,PL,EL,SOFT LNUC,HISB,NO \*S  
 Jul 07 1981 12.5" 24mm DIF,MF,ML,VF HALO  
 Sep 10 1980 12.5" 24mm
- 44 NGC 7479 Peg H55-1 Galaxy SB(s)c PB,CL,ME12,BET2ST**  
 Oct 07 2010 31" 17mmT4 PB,PL,BSNUC,SCORPIN TAIL,BARRED SPR,ONE SIDE,BTR ARM THAN OTHER,ARMS,R=E  
 Sep 21 1984 12.5" 16mm SAME,MB,PL,VF\* ON N TIP,FACE ON,SPR STR DET,S ARM BTR THAN N  
 Jul 07 1981 12.5" 24mm DIF,MF,PL,DIM ARMS,F\* (15MAG) ON N SIDE  
 Jul 15 1980 12.5" 24mm EF,PL  
 Jul 11 1980 12.5" 24mm
- 45 NGC 5248 Boo H34-1 Galaxy SAB(rs)bc B,L,E150,PSBMRN**  
 May 06 1981 12.5" 24mm VB,VL,BNUC,DIM HALO
- 46 NGC 2261 Mon H2-4 Brt Nebula E+R B,VME330,N COM=\*11**  
 Mar 04 2021 36" 17mmT4 (Lb 1),DIF,VB,VL,W/OIII,NEB MORE DETAILED,GRAN,(10:25pm),R=E  
 Mar 04 2021 36" 31mmT5 (Lb 1),DIF,VB,ML,W/O OIII,V SHARP 'V' SHAPE WITH BGN/BL \* AT POINT,BEST VIEW TO  
 DATE,SOFT DET IN NEB,TAIL FADES AWAY,(10:23pm),R=EE  
 Oct 05 2002 12.5" 9mmT6 PB,ML,TRIANGLE SHAPE,F\* AT HEAD,COMET LIKE,NEB UB,MHSB  
 Oct 31 1980 12.5" 24mm  
 Sep 10 1980 12.5" 24mm COMET LIKE APP,NICE
- 47 NGC 6934 Del H103-1 Globular VIII GCL,B,L,R,RRR,\*16...**

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<b>47</b>	<b>NGC 6934</b>	<b>Del</b>	<b>H103-1</b>	<b>Globular VIII</b>	<b>GCL,B,L,R,RRR,*16...</b>
Jul 01 2019	36"	17mmT4	(Class VI),PB,PL,BNUC,OUTER & CORE	*S RSLV,MORE F*S DET LONGER VIEWED,R=E	
Aug 20 2003	31"	25mm	VB,VL,RSLV TO CORE,HUNDRED'S OF *S,MANY *S DET IN CORE,R=E		
Jul 31 2002	12.5"	12mm	SAME		
Jul 08 1983	12.5"	12mm	MB,MS,BNUC,B* TO W,RSLV OUTER *S,GBM		
Jul 30 1981	12.5"	16mm	DNUC,GMBM,SOFT HALO OF *S RSLV,R		
Jul 11 1980	12.5"	24mm			
Jun 20 1980	12.5"	24mm			
Jun 18 1980	12.5"	24mm			
Jun 17 1980	12.5"	24mm			
<b>48</b>	<b>NGC 2775</b>	<b>Cnc</b>	<b>H2-1</b>	<b>Galaxy SA(r)ab</b>	<b>CB,CL,R,VGVSMB,R</b>
Apr 02 2021	36"	17mmT4	VB,VL,R,BLNUC,HISB,LOOKS LIKE GLOB CL,GRAN HALO,NUC VB WELL DEFINED,SUDLY MBM,R=E		
Feb 21 1984	12.5"	16mm	SAME		
Oct 24 1981	12.5"	12mm	DIF,MF,ML,B CNTR RGN,UB,GOOD DEFINITION WHERE ARMS WIND SUR NUC		
Dec 03 1980	12.5"	24mm			
<b>49</b>	<b>NGC 2237</b>	<b>Mon</b>		<b>Brn Nebula E</b>	<b>PB,VVL,DIF,(2238)</b>
Nov 13 2020	36"	31mmT5	(Lb 1),DIF,VB,EEEL,W/OIII,VB PATCHES,DARK AREAS,DEF EDGES SOME AREAS,FINE DETAIL WHEN SCANNING,N2244 IN LBN,(3:54am),R=GE		
Mar 18 2007	31"	31mmT5	VB,EEL,HISB,W/OIII,4-5 FOV'S,SCAN AREA,PATCHY,DUST,DISTINCT FEATURES,R=E		
Oct 31 1980	12.5"	24mm			
<b>50</b>	<b>NGC 2244</b>	<b>Mon</b>	<b>H2-7</b>	<b>Open Cluster II 3 r n</b>	<b>CL,BEAUTIFUL,STSC</b>
Nov 13 2020	36"	55mm	(II 3 m n),EB,EL,JUST FITS IN FOV,~60*S,SVRL VB*S,LOC IN N2237,NEB W/OIII,(3:42am),R=PF		
Mar 18 2007	31"	31mmT5	EB,EEL,SVRL FOV'S,NICE,FEW B*S WITH VAR MAG,LOOSLY SC,R=G		
Feb 25 1984	12.5"	24mm	SAME		
Aug 21 1982	12.5"	24mm	MB,VL,SC,7...9 MAG *S,~20*S,ALM FILLS 24MM FOV		
Sep 10 1980	12.5"	24mm			
<b>51</b>	<b>IC 1613</b>	<b>Cet</b>		<b>Galaxy IB(s)m</b>	
Sep 02 2008	31"	31mmT5	EDIF,EEF,EEL,PATCH,UB,ONE PATCHY AREA DET,SVRL FOV'S,BG GLOW AV,R=P		
<b>52</b>	<b>NGC 4697</b>	<b>Vir</b>	<b>H39-1</b>	<b>Galaxy E6</b>	<b>VB,L,LE45,SMBMN</b>
Mar 27 1982	12.5"	12mm	MB,ML,EL-OVAL,F* TO W,GMBM,TAPERED ENDS		
<b>53</b>	<b>NGC 3115</b>	<b>Sex</b>	<b>H163-1</b>	<b>Galaxy S0- sp</b>	<b>VB,L,VME46,VGSMBMEN</b>
Mar 27 1982	12.5"	16mm	MB,ML,EDGE ON,BNUC,F HALO,F*S BORDER,F* FARTHER SW,CNTR BULGE		
<b>54</b>	<b>NGC 2506</b>	<b>Mon</b>	<b>H37-6</b>	<b>Open Cluster I 2 r</b>	<b>CL,PL,VRI,C,*11...20</b>
Oct 16 1982	12.5"	24mm	MF,ML,SC 'S SUR CLDENSE CL TOWARDS CNTR,~60*S		
<b>55</b>	<b>NGC 7009</b>	<b>Aqr</b>	<b>H1-4</b>	<b>Planetary Neb 4+6</b>	<b>PLN,VB,S,ELLIPTIC</b>
Aug 15 2009	31"	17mmT4	VB,VL,HISB,B BLUEISH,RING DET,F NEB AR CNTRBALL,NO CNTR*,OIII,DOESNOT HELP THAT MUCH BUT RING IS EASIER TO DETECT,R=E		
Sep 27 2005	31"	17mmT4	WITH O/III, EB,VL,EL-R,MORE NEB DET BOTH SIDES OF RING,BTR W/O,R=E		
Sep 27 2005	31"	17mmT4	VF,VL,EL-R,HISB,THICK INNER RING,B BLUE,CNTR *,RINGS DET,R=E		
Sep 01 2002	31"	9mmT6	B BLUE,RING SEEN,DETAIL IN NEB DET,BEST VIEW TO DATE		
Aug 31 1984	12.5"	12mm	VB,MS,R B BLUEISH NEB,SLT EL,UB		
Jul 10 1981	12.5"	16mm	SATURN NEB,RING EASILY SEEN,B BLUE,MB,MS		
Oct 31 1980	12.5"	24mm			
Sep 10 1980	12.5"	24mm			

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<b>55</b>	<b>NGC 7009</b>	<b>Aqr</b>	<b>H1-4</b>	<b>Planetary Neb 4+6</b>	<b>PLN,VB,S,ELLIPTIC</b>
Jul 17 1980	12.5"	24mm			
Jun 18 1980	12.5"	9mm		DISK SHOWN WELL	
<b>56</b>	<b>NGC 246</b>	<b>Cet</b>	<b>H25-5</b>	<b>Planetary Neb 3b</b>	<b>VF,L,4*IN DIF NEB</b>
Sep 02 2008	31"	17mmT4		VF,ML,OVAL,OIII HELPS GRTLY,TRANSLUCENT BUBLE,CNTR* 13MAG,BRINGS IN EDGE,R=G	
Sep 27 1981	12.5"	16mm		DIF,BLUE GREEN,MB,BL,SOURRS 4 *S, 1 * S,PATCHY OVALNESS	
Oct 31 1980	12.5"	24mm			
Oct 29 1980	8"	24mm			
Sep 18 1980	12.5"	24mm		3*S IN NEB,ONE MOST LIKELY CNTR *	
<b>57</b>	<b>NGC 6822</b>	<b>Sgr</b>		<b>Galaxy IB(s)m</b>	<b>VF,L,E,DIF</b>
Sep 12 2007	31"	31mmT5		PF,EL-OVAL,2 FOV'S,SCAN AREA,KNOTS DET,PATCHY NUC AREA,PAIRS=PGC'S,R=F	
Jul 30 2002	12.5"	25mm		IRR,VDIF,VF,VL,EL,PATCHY,RESEMBLES OPEN CL	
Sep 20 1984	12.5"	24mm		EDIF,EF,ML,SEEMS TO BE LOC IN BARREN AREA,SOME HINT OF BG GLOW	
Sep 20 1981	12.5"	24mm		BERNARDS GLXYAXY,JUST N OF 10*S (11...12TH MAG) SC E TO W	
Sep 10 1980	12.5"	24mm		EF,EDIF,LG	
<b>58</b>	<b>NGC 2360</b>	<b>CMa</b>	<b>H12-7</b>	<b>Open Cluster I 3 r</b>	<b>CL,VL,RI,PC,ST9...12</b>
Oct 16 1982	12.5"	24mm		MB,ML,-50*S SAME MAG,RESEMBLES WILD DUCK CL	
Oct 31 1980	12.5"	24mm		LOOKS LIKE S BEE HIVE	
<b>59</b>	<b>NGC 3242</b>	<b>Hya</b>	<b>H27-4</b>	<b>Planetary Neb 4+3b</b>	<b>PLN,VB,LE147,45"D</b>
Dec 28 2008	31"	17mmT4		VB,PL,R,HISB,CNTR*13,OUT SHELL,BTR INNER RING W/TAP SIDES,B BLUEISH,OIII HL,R=E	
Feb 12 1983	12.5"	16mm		MB,PS,R,BLUE FUZZY EDGES,UB,NO CNTR *	
Dec 03 1980	12.5"	24mm		GHOST OF JUPITER,PAIL GREENISH COLOR,GREAT!!	
<b>60</b>	<b>NGC 4038</b>	<b>Crv</b>	<b>H28-4</b>	<b>Galaxy SB(s)m pec</b>	<b>PB,CL,R,VGBM</b>
Mar 16 2009	31"	17mmT4		VB,VL,EL,PATCHY AREAS IN GLXY,SHISB,NND,DARK AREA SPLITS TWO,INTRACT=4039,R=G	
Mar 22 2004	12.5"	12mmT4		MF,PL,OVAL,PATCH,UB,NND,CLOSE COMP=4039,R=G	
May 03 1981	12.5"	24mm		DIF,PB,VL,EL,BOTH NUC OF BOTH GLXY SEEN,RING TAIL GLXY,ARMS DET,PAIR/4039	
<b>61</b>	<b>NGC 4039</b>	<b>Crv</b>	<b>H28-4</b>	<b>Galaxy SA(s)m pec</b>	<b>PF,PL</b>
Mar 16 2009	31"	17mmT4		VB,VL,EL,SHISB,UB,NND,DARK AREA SPLITS THE TWO,COMP=4038,R=G	
Mar 22 2004	12.5"	12mmT4		MF,PL,OVAL,PATCH,UB,NND,CLOSE COMP=4038,R=G	
May 03 1981	12.5"	24mm		PAIR/4038,RING TAIL GLXY	
<b>62</b>	<b>NGC 247</b>	<b>Cet</b>	<b>H20-5</b>	<b>Galaxy SAB(s)d</b>	<b>F,EL,VME172</b>
Sep 24 1981	12.5"	16mm		DIF,MF,VL,B* S EQ PLANE,* OFF E SIDE,NND,PATCHY,EL,SIM TO 253	
Sep 10 1980	12.5"	24mm			
Sep 07 1980	12.5"	32mm		EL,SEEN BY SWEEPING AREA,LG	
<b>63</b>	<b>NGC 7293</b>	<b>Aqr</b>		<b>Planetary Neb 4+3</b>	<b>PF,VL,E OR BIN</b>
Sep 02 2008	31"	31mmT5		DIF,PF,EEL,FILLS 17MM,OIII HELPS GREATLY,SVRL F*S CNTR RGN,CNTR* 13MAG,L DARK AREA SUR CNTR,FINE DETAIL OUTER EDGES,BEST TODATE,R=E	
Jul 10 1981	12.5"	24mm		EL,MF,DIF GAS CLOUD WITH *S WITHIN ITS BOUNDARIES,HELIX NEB	
Oct 31 1980	12.5"	24mm			
Sep 18 1980	12.5"	24mm			
Sep 10 1980	12.5"	24mm		HELIX NEB,WITH NEB FILTER E!!!	
<b>64</b>	<b>NGC 2362</b>	<b>CMa</b>	<b>H17-7</b>	<b>Open Cluster I 3 r</b>	<b>CL,PL,RI,30CMA</b>
Oct 16 1982	12.5"	24mm		~30*S,VB,VL,B* IN CNTR,TRI SHAPE,*S ~SAME MAG	

## Caldwell Observation

<b>64</b>	<b>NGC 2362</b>	<b>CMa H17-7</b>	<b>Open Cluster I 3 r</b>	<b>CL,PL,RI,30CMA</b>
Oct 31 1980	12.5"	24mm	6TH MAG CNTR * SUR BY 9TH **S,E	
<b>65</b>	<b>NGC 253</b>	<b>Sci H1-5</b>	<b>Galaxy SAB(s)c</b>	<b>VVB,VVL,VME54,GBM</b>
Sep 06 2002	12.5"	9mmT6	VB,VL,SPRIAL STR,GLXY 2 FOV IN SIZE,DUST LANES,BREAKS DET,B RGN DET	
Sep 23 1981	12.5"	24mm	DIF,MB,EL,EDGE ON,DARMS,DUST LANE,F* CNTR-W ARM S OF NUC,B* SE&W,KNTY STR SP	
Oct 31 1980	12.5"	24mm		
Oct 29 1980	8"	24mm		
Sep 09 1980	12.5"	24mm	E!!,BEST SIGHTING TO DATE	
Sep 07 1980	12.5"	24mm		
Aug 22 1980	12.5"	24mm	VL	
<b>66</b>	<b>NGC 5694</b>	<b>Hya H196-2</b>	<b>Globular VII</b>	<b>CB,CS,R,PSBM,R,*9SP</b>
Apr 11 2015	36"	17mmT4	(Class III),PB,MS,BSNUC WITH HISB,HALO OF RSLV **S CLOSE TO NUC,19 DEG ALT,R=G	
Jun 11 1983	12.5"	20mm	MF,PS,BNUC,R,2**S SE,1*SW 1 GLXY DIA,1F* SW 2 GLXY DIA,MHISB	
<b>67</b>	<b>NGC 1097</b>	<b>For H48-5</b>	<b>Galaxy SB(s)b</b>	<b>VB,L,VME151,VBMN</b>
Sep 16 2009	31"	17mmT4	EB,EL-OVAL,EXT BLNUC,SUDLY MBM,CNTR REG UB,L HALO OFARMS,INTRACT=1097A,R=E	
Sep 10 1980	12.5"	24mm		
Sep 09 1980	12.5"	24mm		
<b>69</b>	<b>NGC 6302</b>	<b>SCO</b>	<b>Planetary Neb 6</b>	<b>PB,E PF,(SWIFT,TRIP)</b>
May 18 2009	31"	17mmT4	VB,VL,EL,B BLUE-GREEN,IRR IN SHAPE,HISB,B CNTR RGN SUR CNTR*,BM,NO CNTR* JUST B RGN TAPERED ENDS,ONE SIDE THINNER AND THICKER THAN OTHER,OIII HELPS,NEB GRAN BROKEN IN PARTS,NEB S-SHAPE,R=E	
May 28 2008	31"	17mmT4	VB,VL,EL,HISB,B CNTR * RGN,PATCHY AREAS OF NEB DET,B AREAS,W/OIII,MORE DETAIL IN NEB,B GREEN,E,R=E	
<b>70</b>	<b>NGC 300</b>	<b>Sci</b>	<b>Galaxy SA(s)d</b>	<b>PB,VL,VMIE,VGPMBM</b>
Sep 23 1981	12.5"	16mm	DIF,EF,ML,ENCOMP 5F*S IN 24MM,N SIDE BTR,MILKY GLOW	
<b>71</b>	<b>NGC 2477</b>	<b>Pup</b>	<b>Open Cluster I 2 r</b>	<b>CL,B,RI,L,LC,*12</b>
Dec 03 1980	12.5"	24mm	LOOKS LIKE MINATURE BEEHIVE,RESEMBLES GLOB CLASS X	
<b>72</b>	<b>NGC 55</b>	<b>Sci</b>	<b>Galaxy SB(s)m: sp</b>	<b>VB,VL,VME,TRIN</b>
Sep 23 1981	12.5"	24mm	VDIF,MF,PL,EDGE ON,F* SIDE OF GLXYAXY BY NUC,NND	
<b>73</b>	<b>NGC 1851</b>	<b>Col</b>	<b>Globular</b>	<b>GCL,VB,VL,R,VSVVBM</b>
Oct 12 2012	36"	17mmT4	EB,EL,BLNUC,HISB,V SIM TO M15,RSLV TO CORE,8,8 DEG ABOVE HRZN,HUNDREDS OF F* SUR CORE,HISB CNTR,R=GE	
<b>74</b>	<b>NGC 3132</b>	<b>Vel</b>	<b>Planetary Neb 4+2</b>	<b>PLN,VB,VL,LE*9M</b>
Dec 28 2008	31"	17mmT4	VB,PL,OVAL,B CNTR*,DARK INNER RING,B BLUEISH GREEN,8 DEG ABOVE H,OIII HELPS,R=E	
<b>75</b>	<b>NGC 6124</b>	<b>SCO</b>	<b>Open Cluster I 3 r</b>	<b>CL,B,L,PRI,LCM,*9.11</b>
May 28 2008	31"	17mmT4	EB,EEL,~50-70*S,VAR MAG,SVRL FOV'S,M CL CNTR,R=F	
<b>76</b>	<b>NGC 6231</b>	<b>SCO</b>	<b>Open Cluster I 3 p</b>	<b>CL,B,CL,PRI,ST10..13</b>
May 28 2008	31"	17mmT4	EF,EL,~50-70*S,GOOD CL,FILLS FOV,B**S VAR MAG,7 DEG ALT,R=G	
<b>77</b>	<b>NGC 5128</b>	<b>Cen</b>	<b>Galaxy S0 pec</b>	<b>VB,VL,VME122,BIFID</b>
Apr 16 2009	31"	31mmT5	EDIF,EF,EL,CAN ONLY SUSP,L AREA OF F BG HAZE,SUSP,R=P	
Mar 20 2009	31"	17mmT4	VDIF,VF,ML,OVAL,PATCH,6 DEG ABOVE HRZN,* IN GLXY,F GLOW DET,R=P	
<b>78</b>	<b>NGC 6541</b>	<b>CrA</b>	<b>Globular</b>	<b>GCL,B,R,EC,GBM,RRR</b>



# Caldwell Observation

**78 NGC 6541 CrA Globular GCL,B,R,EC,GBM,RRR**  
Jul 01 2019 36" 17mmT4 (Class VI),PB,PL,L HISB CNTR,5 DEG ALT,LOWEST OBJ TO DATE,R=F  
Total: 77