CLTG EMERGENT AND FISSION CLASSIFICATIONS OF MULTI-OBJECT SYSTEMS FOR MORPHOLOGICAL TAXONOMY - PART I

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Abstract

As outlined in Part I of this series there are many types of paired- and multi-object systems which exemplify emergent and fission systems. This report describes the CLTG (clone or compact, later-type galaxy) multi-object system. The CLTG have a variety of morphological appearances albeit many are non-spiral 'stellate' types and contrast with clones or late spiral type objects. Along with this collection of CLTG families we include a data-driven method of classification members of the family. We also created several *ad hoc* descriptions of patterns formed by family objects.

Introduction

The results of emergent/fission events from a primordial anlage yields variations of solo, paired-object or multi-object systems into P1 'parent' or 'proximal' and C1 'children' or 'closest' objects. The "parent" of this system pairing is usually the earliest,

largest object based upon size, chemistry, physical and kinetic properties. Moreover, an unary (or soli) emergent precursor object theoretically splits into a multi-object system with two or more resulting independent objects ('Mastory,' mass history.) We can easily recognize a pattern emerge evolutionarily for these families. **In the cosmos of emergent processes we asked, "where does life begin?" and the answer is, as a star!**

SYNTAXES FOR THE WORD "EMERGENT" …

If anyone prefers another term for "emergent," these options are from Merriam-Webster.

https://www.merriam-webster.com/thesaurus/emergent
"Synonyms and Antonyms of emergent

needing immediate attention

- **Since it was not seen as an emergent problem, it was continually put off.**

Synonyms of emergent
acute, burning, compelling, critical, crying, dire, exigent, imperative, imperious, importunate, instant, necessitous, pressing, urgent"

Yes, yes, that is a *verbatim* quote from the dictionary!

In the next sections which outline this report's contents one will find a brief preview of a PDF containing each section's extended cache of examples and commentary. With most tables and examples of family objects one will be able to interpret them through the color code we established to designate the family hierarchy. Soon it will be obvious that family 'culling' is done *de rigueur* for brevity as we are not speculating on mass estimates of family groups but rather introducing the cltg designated family members in their many forms. Leaner family sizes present more obvious clues to the basics of the ageless emergent mystique.

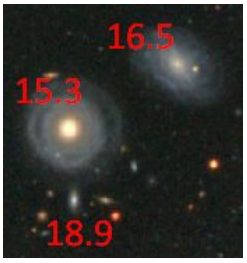
http://iopscience.iop.org/article/10.1088/0067-0049/217/2/32/meta
Buta etal., 2015

ETG	**An early-type galaxy, collectively referring to a galaxy in the range of types E–Sa**
ITG	**An intermediate-type galaxy, taken to be in the range Sab–Sbc**
LTG	**A late-type galaxy, collectively referring to a galaxy in the range of types Sc–Im**
ETS	**An early-type spiral, taken to be in the range S0/a–Sa**
ITS	**An intermediate-type spiral, taken to be in the range Sab–Sbc**
LTS	**A late-type spiral, taken to be in the range Sc–Scd**
XLTS	**An extreme late-type spiral, taken to be in the range Sd–Sm**

Buta, et al., used the pure morphological dogma to refine object phases which comes close to our data-driven analysis. Missing from other approaches is a host of epistemological characteristics which simplify the finer distinctions into categories that can include kinetic object activity, morphology and chemistry.

The interpretation in this paper is not solely based upon morphology, as explained earlier, but rather ugriz-r AND morphology. The data-driven component helps us arrive at a stage of the galaxy's life cycle which better relates to the emergent potential of the system. In any two systems, over time, these factors determine the number of objects which appear in one family but differ from the another family. Keep in mind that typical P1, C1 and cltg could alternatively result in a 50:50 fission split without a SFR emergent processes. It was mentioned in Part-I that the Green Valley object may favor some (Mastory/age-related) mass parity splitting rather than the emergence of several objects including cltgs.

Mastory redshift cluster array ...



18.93 .040 1237657069549650283 5 0.040s among **83 0.04s**

Some of these redshift family groups, or clusters, remind us that we don't have a name for the superstructure formed. It's like an uber-galaxy formed OF galaxies - a galaxy collective portmanteau "galactive" family, group or cluster. The discussion about object group distributions in normal or orthogonal planes from the viewer drives these interpretations. These hypotheses come with BOTH positive and negative emergent biases ie., although all families can contribute to emergence that is not the same as saying they all occur exactly the same way. With a larger number of family sets we hope a Mastory study will flesh out these salient properties.

Combined Age-Type Object Table (see section with Buta ref. for his derivations)

ETG	R (LE12 - 13.5 - 15)	Early - mid-range - late
MTG	R (15 - 16 - 17)	Early - mid-range - late
LTG	R (17 - 18.5 - GE20)	Early - mid-range - late

"**Mastory**" is our syntax for viewing object families that undergo similar growth patterns.	P1[xx] **Solo**

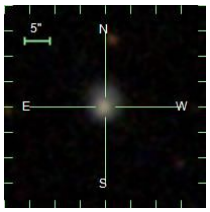
One can find many references to individual galaxy dynamics but scarce input to more than one object. We report here the myriad of possibilities arising in object family groupings.

There are also plentiful “serial simulations” which serve to reinforce speculation about how many families potentially experienced emergent processes.

Hopefully, soon, there will be more family-oriented reports extracted from existing idiosyncratic single object summaries. The cosmos is not readily simulated by unbiased “simulation” programs. Even with 2 trillion possibilities, we are better off viewing observable real family objects rather than biased, random, fictional machinations. Simulations of family mass estimates, based on REAL DATA, might are more useful.

In these graphics, mass acquisition is expressed through an arbitrary object shorthand expression. Formation of family object types arrays are designated for brevity and not deterministically.

3M Spec DNA twins, clones, nunchucks



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P1[X] [x] cltg **Soli**

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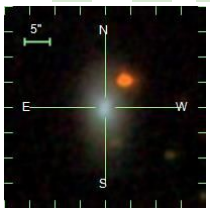
P1[XX] [XX] **3M Spec DNA twins, clones**



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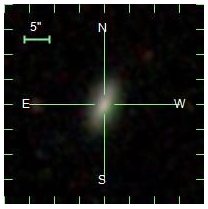

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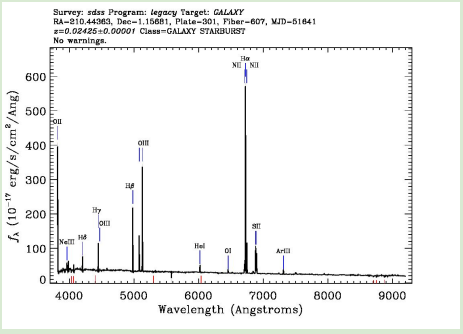
P1[XXX] [xx] [xx] **dGBs**



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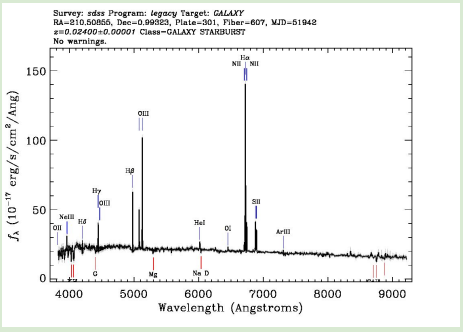

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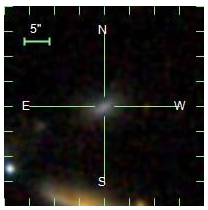
See discussions for our ad hoc naming convention elaborating family member types used in this report.

Graphically, the concept should convey mass contribution to emergent / fission processes.

Note the “Green Valley,” Middle phase object. The middle type objects were discussed and tabulated in the first paper.

When viewed in the context of fission families the “Valley” looks like any other grouping and here are examples with middle type “nunchucks”.



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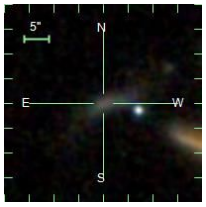

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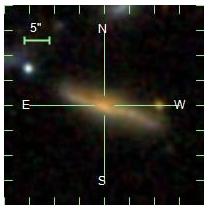

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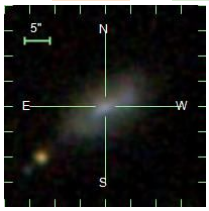
P1[XXXX] [xxx] [xxx] **Nunchuks**



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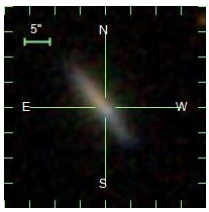

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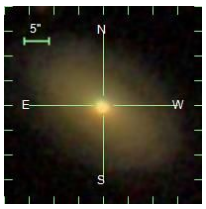

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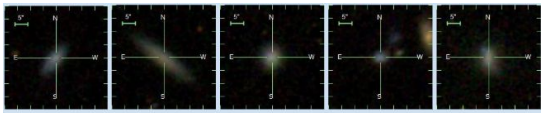
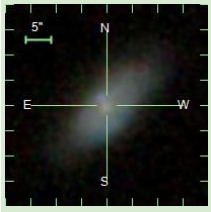
P1[XXX] [XX] [XX]

(We see many ”**nunchucks**” and some families have five ‘bound’ by spec DNA.)



1237674651534950590 3M sfing DNA
1237648722836848839 3M sfing DNA
1237651752932343944 3M sfing DNA
1237674651535343698 2M sfing DNA
1237651752932016231 2M sfing DNA



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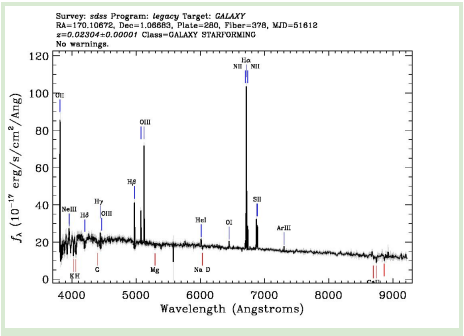
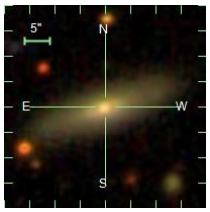


3M sfing (star-forming) spec DNA

The Middle objects also add weight to our thesis that if GV objects RANDOMLY formed by the negative data, conjectural “merging” they should contribute to **Green Peak objects**, not a “Green Valley.”

Finally, the eldest members of our evolutionary tree. We mean no disrespect to the Hubble sequence and our only difference is that we find it more relevant to include other family members into the discussion (sequence) to accentuate how vital and important all members of the emergent family are.



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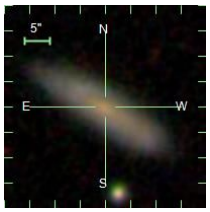

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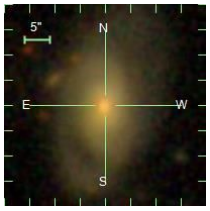

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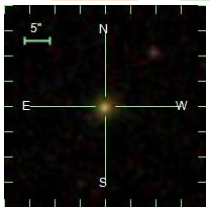
P1[XXXX] [XX] [XX] [x] **CItg**



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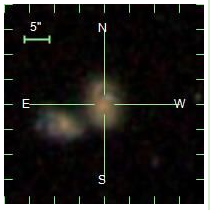

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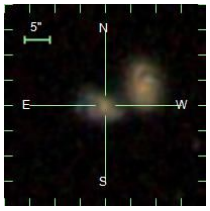

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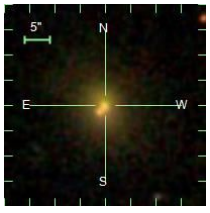

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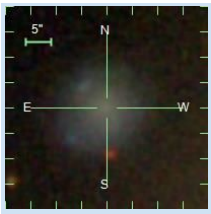
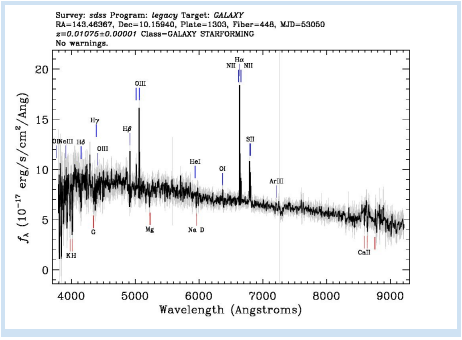
P1[XXXXX] [XXx]

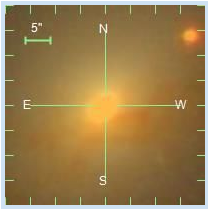
Evidence that a GV split can produce an early and late objects.



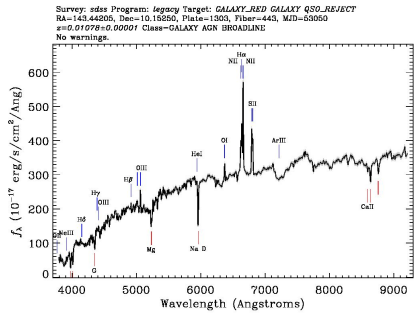
18.95 18.70 .011470 1237661066024255571 1.342' cltg



weak 2M sfing



12.04 11.54 .010617 1237661066024255557 rdif=6.9 P1 highest rdif?



agn broadline

Early on we ascribed the term "**trillion**" to pairs of morphologically dissimilar objects like spirals and ellipticals.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"**Trillion**" examples …


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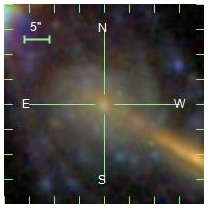

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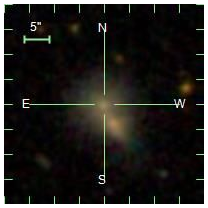
As GV family members the 'trillion' relationship is easy to establish. It can be useful to continue referring to these by a subtype of GV objects.

Exemplary observations from this set of objects (and terminology)



cutout, not a GV **trillion**

1237663716017176770

Trillion …

(The term “trillion” came from discussions about finding ‘old’ and ‘new’ objects in the same red shift frames. This paper has hundreds of family systems of objects with smaller members but the odds are longer for finding two, or more, large, age-antipodal types. Obviously, the term “trillion” is an exaggeration but the point is made.) The “in and out” emergent/fission types may offer clues to how the ‘trillion’ originated in the GV paired-object space. This collection is from the current population being reported and supplemental data.

The origin of two trillion(+) galaxies surely has a place in cosmic evolution. Another future publication, Part-III, has systems with shared dustlane(s) (‘Dustory’ dust history) representing the “emergent” phase of fission. This report discusses/reports/analyzes morphological properties of those data-driven, emergent/fission paired-objects by redshift (with supplemental raw data catalogs).

https://cosmosmagazine.com/space/galaxy-produces-molecular-forests
“And this, in turn, suggests in turn that whatever is happening in NGC 253 is governed by some type of galaxy-wide process, rather than the smaller-scale processes we currently see in our own galaxy. Though, what, exactly, that process might be remains to be discovered.”

https://scitechdaily.com/starburst-galaxies-contain-much-higher-proportions-of-massive-stars/
"Schneider explained, “We found around 30% more stars with masses more than 30 times that of the Sun than expected, and about 70% more than expected above 60 solar masses. Our results challenge the previously predicted 150 solar mass limit for the maximum birth mass of stars and even suggest that stars could have birth masses up to 300 solar masses!”
Rob Ivison, co-author of the new ALMA paper, concludes: “Our findings lead us to question our understanding of cosmic history. Astronomers building models of the Universe must now go back to the drawing board, with yet more sophistication required.”"

https://www.yahoo.com/news/m/629e34a5-dcca-342c-86d1-d9a94fb016c6/ss_new-research-undermines-star.html
"As a consequence, the community may need to revisit its calculations regarding the complex processes that dictate how stars are born," Marsh said. "The evolution of a core into a star involves many different physical interactions, and the results of studies such as this should help us better understand how it all happens."

https://www.yahoo.com/news/m/15c484fa-9dce-3b4d-ace7-89acafa746b4/ss_hints-of-the-first-stars-seen.html
"We can show with this observation that the first galaxies were already present 250 million years after the Big Bang," study author Nicolas Laporte, from University College London, told Gizmodo.

***AD HOC* NAMING ...**

Data-driven system selection

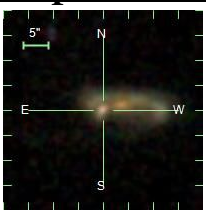
The objects across redshifts z = 0.001 - 0.2 have been collected for the values of UGRIZ-r and UGRIZ-i primarily from family members (P1), (C1) and (cltg) types. The calculated (r-dif) show that many of these pairs do share a serial 'family' resemblance. The data variables also point to the spatial arrangement of objects in a family and the implied factors that contribute to variations of 'aging' of cltg with distance from anlage - or emergent points of origin. Cursory calculation of the P1-cltg object gaps in the .03 and combined .05-.07 redshift ranges showed, as in the first paper, that the our data cells were similar indicating that our families may share a 'local' (fission) dispersion influence following emergence.

Reported herein are the putative binary pairings chosen from the nearest data-driven pair of a multi-object family. These processes are delineated from within and across redshifts (looking for like-parings) and through analysis of their properties. The primordial anlage system is easily likened to an irregular-type, or "pec," peculiar,

system often with an obvious overlap of its compositional 'internal' objects. From overlaps, '**cometoids**,' '**in & outs**,' '**cutouts**,' and '**nunchucks**,' **twin-like cltg pairs**, with spectra DNA is demonstrated across family members.

Our data-driven classification of object types will be discussed in a series of tables with links to PDFs where the semantic differences are elaborated.

Inspirational Art from Contributors



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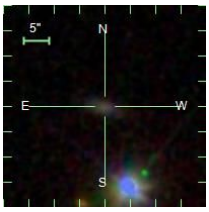
This model of an emergent object pair harkens to an original zoo project examining whether a cosmological object rotation bias exists - it does not. In this example the emergent process always delivers both types of rotational possibilities.

Our emergent 'simulation' neither required a super computer nor third party funding of any kind.

In this section we can deliberate over the variety of *de novo* emergent and fission objects in phases of transition.



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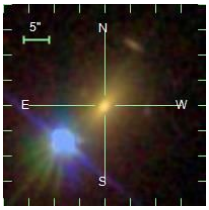
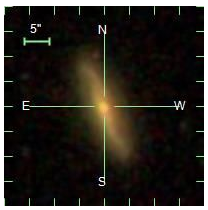
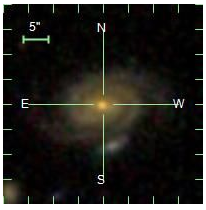




1237663783125647375 1237663783125647518

This model holds 2 possibilities where emergent objects arise. The wishbone holds the paths of "nunchucks" with a common ancestor. On the other hand, it can be 2-object system of late objects.
The cutout model reminds us about the rotational prospects of the objects.



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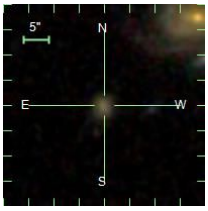
CCW



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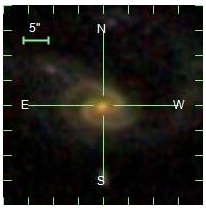
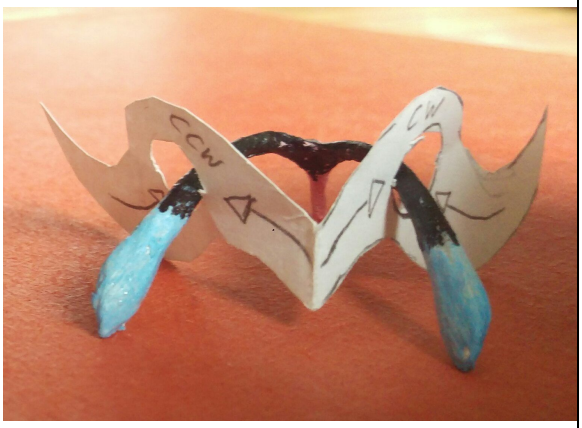
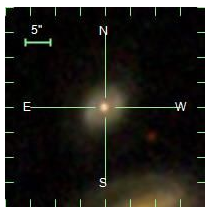


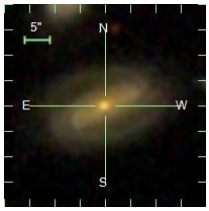
1237663716017700975 cw



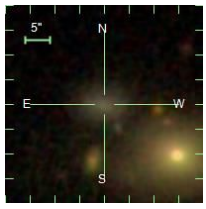
Evolution of a "**nunchuck**" or "**clam shell**"
Although appearing wrapped in a single interpretation, this example applies to any emergent process. Our singular exception might be the appearance of "solo" objects.

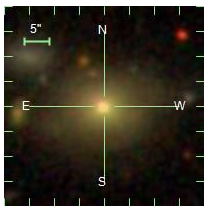
“Minimes”



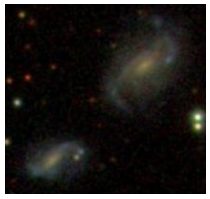
16.44 

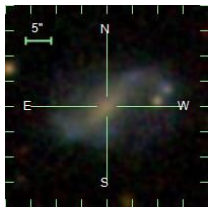
15.46 .057 .058 1237671140405543105 1237671140405543106

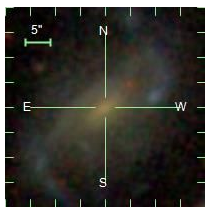


17.74 

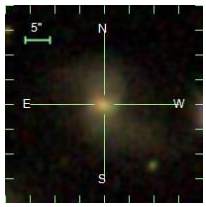
15.01 .060 .062 1237648721755373632 1237648721755373628

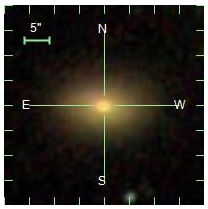

.025



16.37 

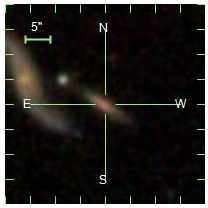
15.41 1237680267738677765 1237680267738677494



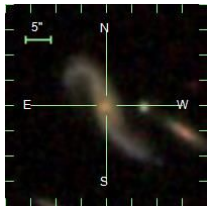
16.06 

14.96 .029 1237651504882188321 1237651504882188320

Solo, or soli, object(s) arise *de novo* in the cosmos but are not readily simulatable.
“**Minimes**”



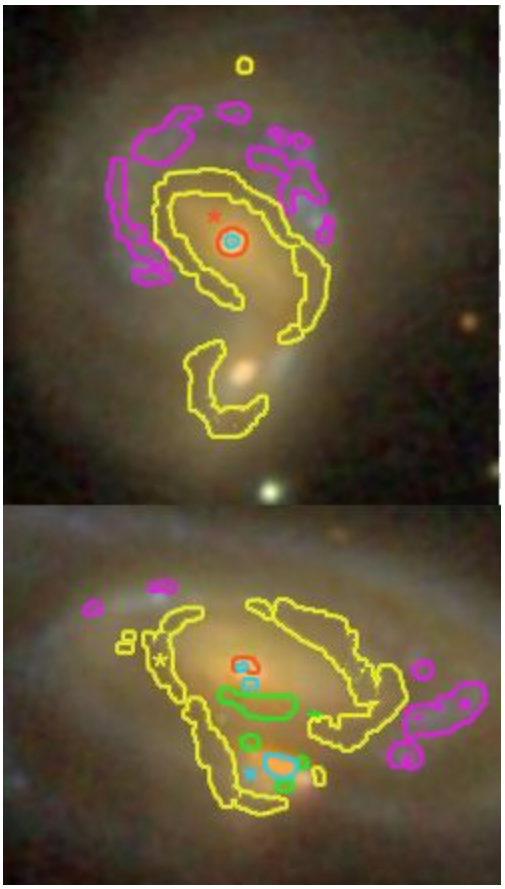
18.66 18.13 .1052ss 1237648704051478936



16.73 16.36 .105995 1237648704051544257

Many of our families have later members which bear a striking resemblance to their P1 generation.

This similarity can extend to “**clones**” or “**clam shells**” with chemical and kinetic spectra “**DNA** .”

“Dustory” This is the topic of another emergent paper where we find the “dust history” of a paired system shows the late object emerging from the P1 location and moving dust with it, dust it is not old enough to evolve on its own. These examples were highlighted with Photoshop to illuminate the shared pixels of two systems. “*” represents location of sampling pixels. z.029064 1237662636904022101 C1 12.81” z.030268 1237662636904022099 P1 **Figure 2. Emergent systems** {fig01_030emergent}	**“Dustory”** 

Our appendices have links to the fuller ‘family’ set from which these CLTG are culled.

SEMANTIC terms used to describe OUR objects distinctively

Studying multi-object systems adds to our knowledge of single object classification and should contribute to understanding galaxy formation and mass distribution history. Multi-object systems not only have objects of specific types but the groupings appear over red shifts and at developmental stages. Defining a multi-object system is more valuable than classifying and single object due to the uniqueness of family members with their mass and data-driven metrics. With more data available for family members these relationships will expand more. It’s not clear how much is

contributed by ‘marginal’ objects in families which, lacking spectra etc., can’t be readily analyzed.

Within the Clone/Compact Later Type Galaxy set we must mention that the idealized object is stellate but as searches have revealed their morphology can run the gamut from irregular spiral to clone and those types are not “compact.” The depth of our archival catalogs is sufficient to show that multi-object systems, with or without CLTGs, indicate strongly that these are (emergent) post-emergent and fission families.

In a subsequent papers we will show families and pairs of objects which share dust lanes. This latter group contains obvious later-type objects emerging from under the dust lane of the system. Any other interpretation for so many examples is certainly unscientific. It is amazing, and sad, that no one has recognized these (Dustory) systems in this context.

Later gap of dustory objects …

Combined Age-Type Object Table from page 4

ETG	R (12 - 13.5 - 15)	Early - mid-range - late
MTG	R (15 - 16 - 17)	Early - mid-range - late
LTG	R (17 - 18.5 - 20+)	Early - mid-range - late

Note:

We have made no supposition that the galaxy type is sufficient to predispose the object to an absolute ‘age’ inference. Emergence can happen to all types of P1 family predicates and therefore the ‘age’ variance should be mitigated by its UGRIZ, or other, data-driven component(s) which exhibit that defining variance more strongly as emphasized herein. Also, over all redshifts the majority of UGRIZ-r values range from 12 to 20.

Solo/soli arise but not as expected from an edge-on S type with dots of mass at the polar core coordinates. The dots have no data so we use them as hypothetical dGBs. The grouping of soli may be the alternate group formation. This is good information if it holds.

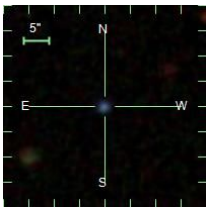
Redder cltg with wider gap but, not necessarily the rule for all gaps.

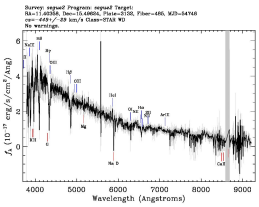
The ad hoc table can go here.
Values .03 and .05-.07 are similar.

Late post-emergent group example

20.27 zunk
1237660027202896478 early soli dGBs?

Trick question: Which came first?

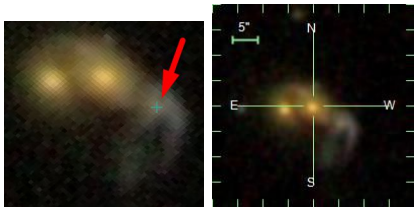




1237649920574816604

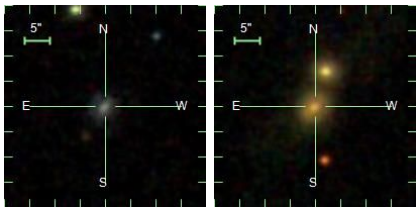
The WD did by billions of years.

Gap 6.812" ugriz 19.18, rdif=2.5



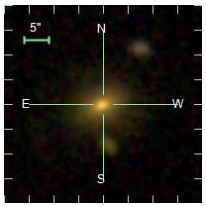
1237648721247469830

Gap 9.975' ugriz 18.68, rdif=1.1

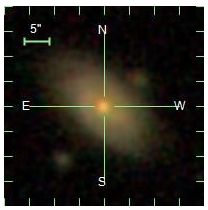


1237663783677919447
1237663783678050483

dGB models



16.63 .125 1237652900227055770



15.47 .082 1237650369952022696

Table 2. Same Redshift Systems Reddening by Redshift Groups

Gap distance	Z LT 0.05	Z 0.05-0.08	Z GT 0.08
GE 60 sec LT 60 sec	15.13 50 obs 15.75 38 obs	15.96 8 obs 16.97 30 obs	16.92 3 obs 16.60 13 obs

Nplanar viewing of objects

In the example on the right we offer objects distributed in the purple (normal) plane, viewed from the green plane, where most objects appear in a tight redshift range (.0251 - .0253 eg.).

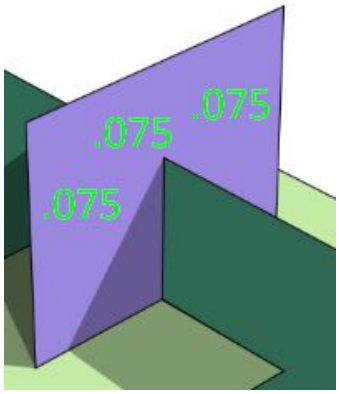
Oplanar viewing of objects

In the lower example the plane is rotated 90 degrees (orthagonal to normal) to show it leaning away from the viewer - with the same object distribution but, in a looser redshift range (.0250 - .0256 eg.).

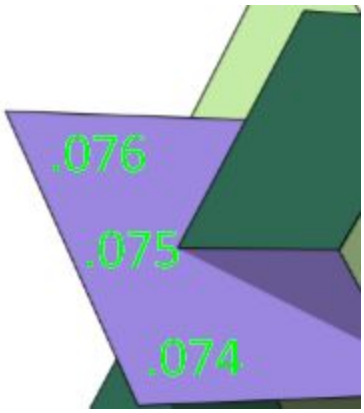
Mplanar viewing of objects

The third viewing option contains 2 or more planes with our objects with loose (mixed) redshift distribution (.0148 - .0262 eg.). One might view this organization as a spherical distribution and the other types as planar arrays.

Nplanar



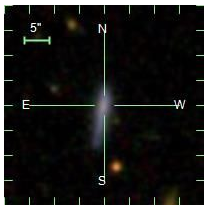
Oplanar



	1 .075
NPLANAR VIEWER ---	2 .075
	3 .075

OPLANER VIEWER --- 1 .074 --- 2 .075 --- 3 .076

Nunchucks Oplanar



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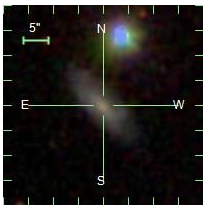

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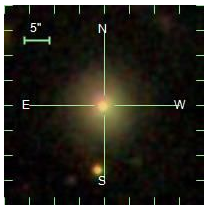
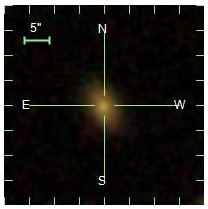
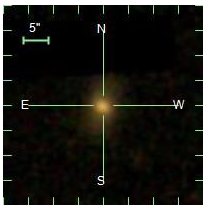


15.32 .056 .057

1237666407379566753 1237666407379566646 1237666407379566757



17.68


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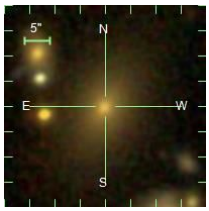

15.45 .076 .078 .079

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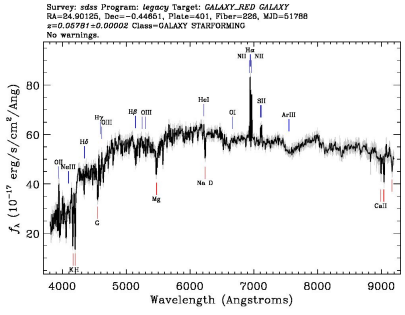
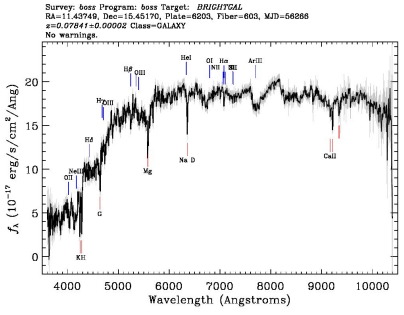


15.32 sfing 58


15.45 18

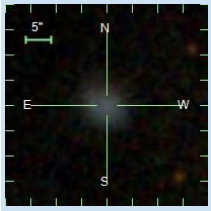
We can easily find 15 or more objects at some similar redshift and they appear as planar spread out horizontally and vertically. Others have a slightly greater redshift spread and represent the plane tilted away. Among these objects are the "star-forming" and "star-burst" spectra indicating that the objects are experiencing emergent growth. What we don't understand are what the contributing kinetics. How does one simulate the unknown; call George Lucas?

From the first publication in this series we saw that the gap indicated a tendency to increase the 'red' value of these objects. There are many, however, which remain blue or even get bluer as the gap increases. Seeing these family distributions invites comparisons with object morphology. We asked, can a flat array emulate a grand, 'grand design' spiral cluster structure and the mixed array look like an elliptical. (see p4 - uber galactive super structure?)

DNA

When collecting the group of cltg objects it is inevitable that the family will reveal its chemical evolution through their spectra. In this example we also get an opportunity to appraise the system in emergent processes.

GVs ...



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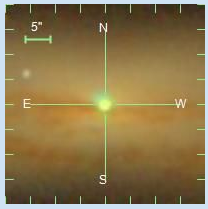
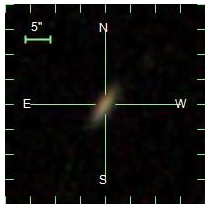


12.01

1237655497594962331

1237655497594896459 .005 .006



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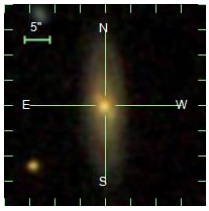
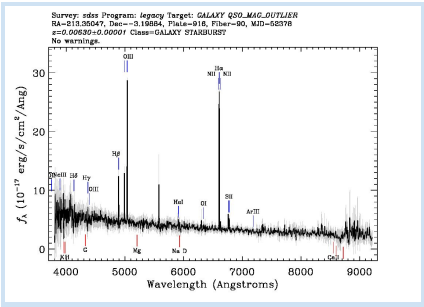


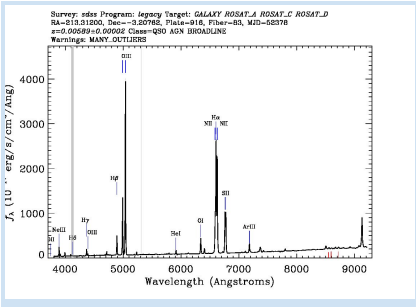
15.98

1237663785280143504

1237663785280143551 .055 .056

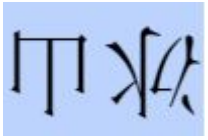


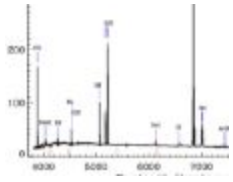
2M sbst



2M qso agn broadline

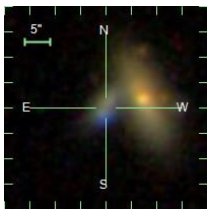
Dynamic Nuclear Attributes

Chinese for iceberg 


3M 冰山

Definitions: dGBs (aka nunchucks? trillion?)


.029s solo gGB emergent



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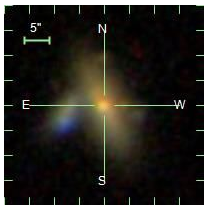
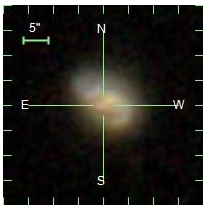


15.50 .029
1237648720173400309 7.695” cltg 1237648720173400308 rdif=2 P1

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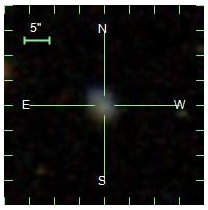

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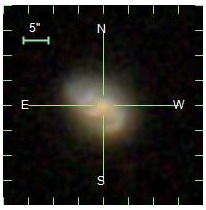
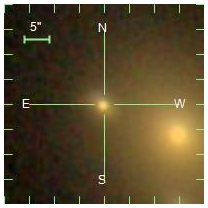


15.15 .040 .041
1237657192519696458 emergent 1237657192519762033 1237657192519696457 DNA



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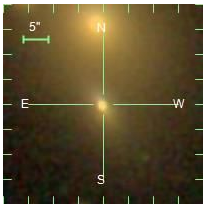

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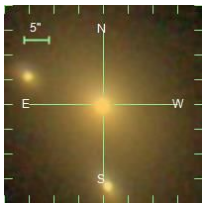

13.37 .044 .046
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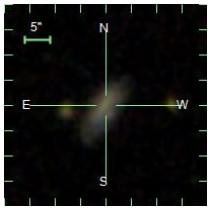
dGB analyzed in 1st paper



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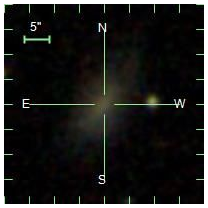

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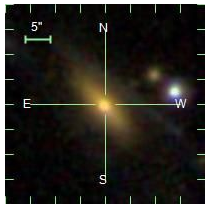

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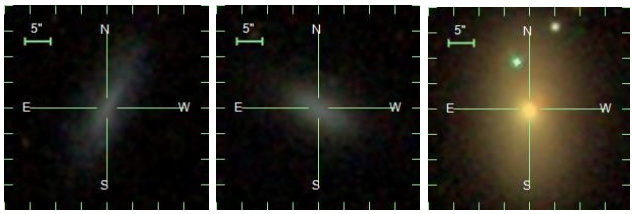

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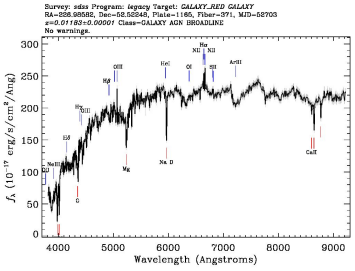
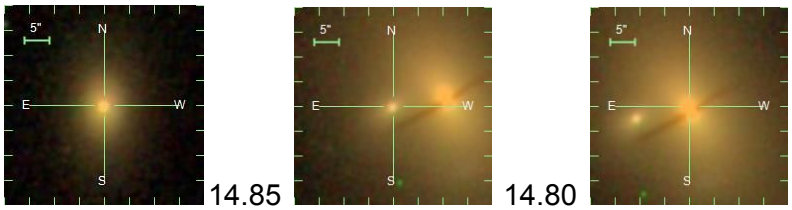


agn broadline



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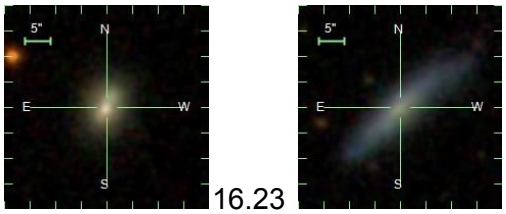

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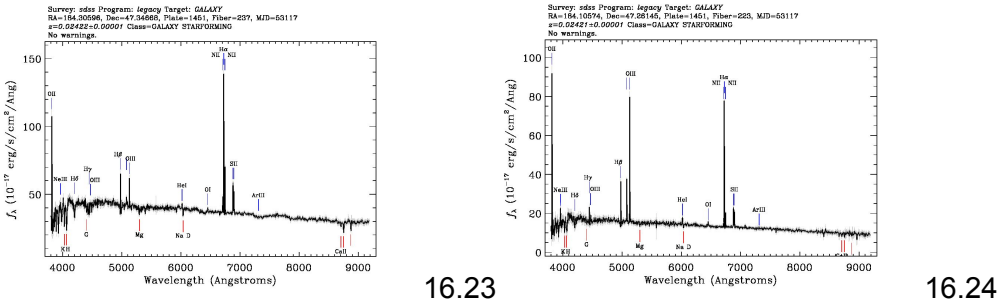

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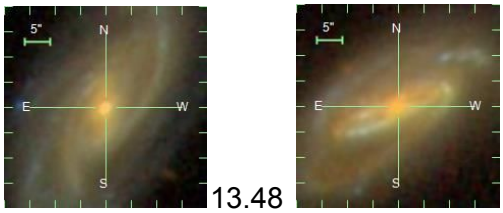

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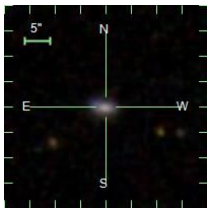

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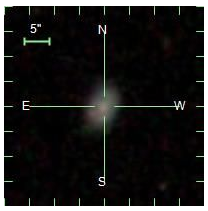

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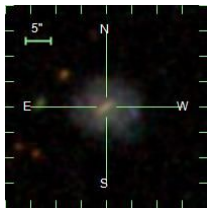

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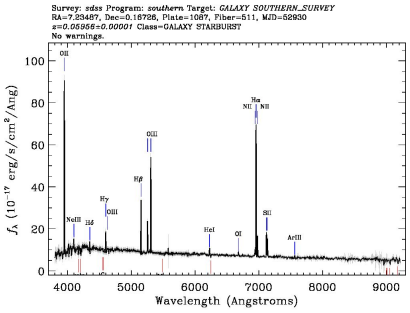

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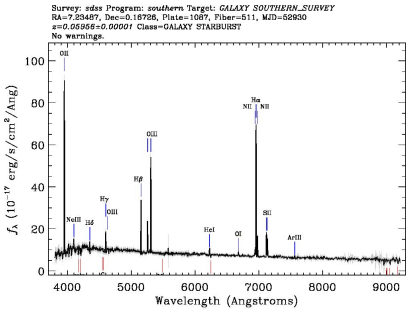

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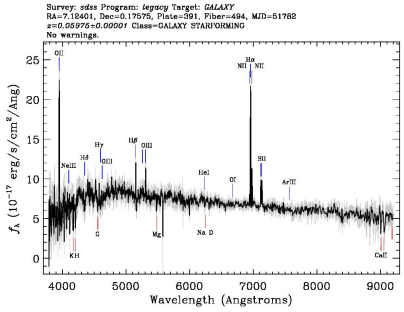

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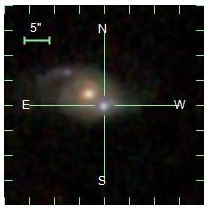

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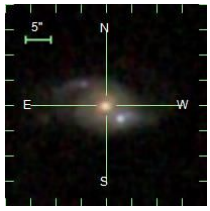

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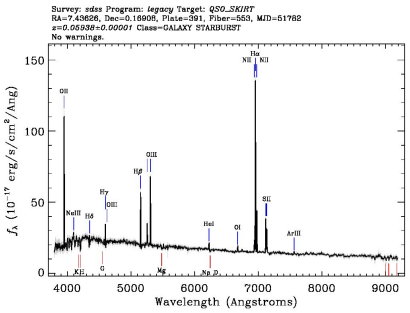
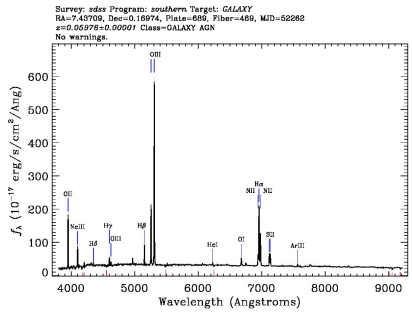
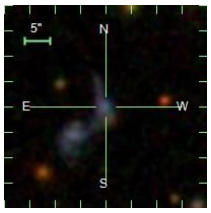
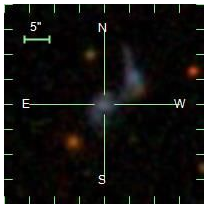
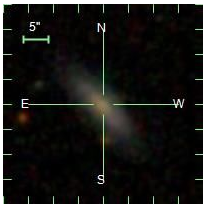




17.75 16.26 3M agn DNA

 19.01  18.87  17.23 .053 zunk
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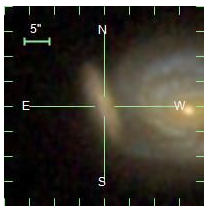
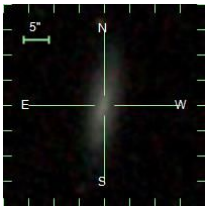
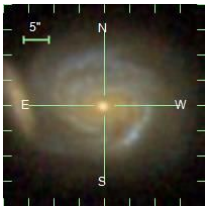
Incipient emergents

As of now there is no clear end of 'emerging' and beginning of fission.
They are given hyphenated status herein.

GV

 20.28  17.36  14.03 .033 .034
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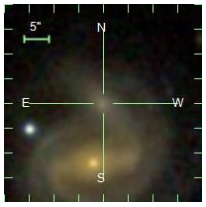
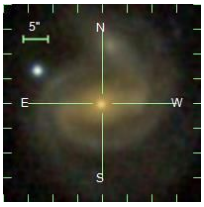
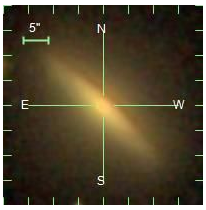
 16.54  14.56  13.82 .029
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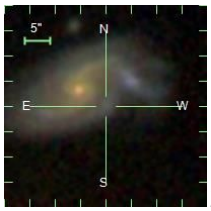
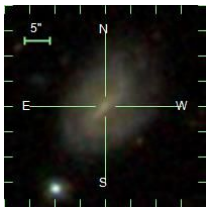
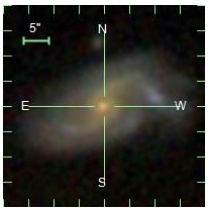
GV

 21.23  16.18  15.44 .042 .043
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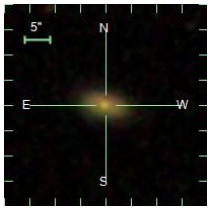
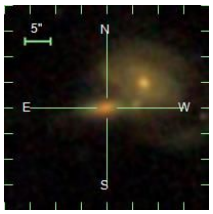
 17.45 17.02 .104425 1237671128587436255 in 1st paper



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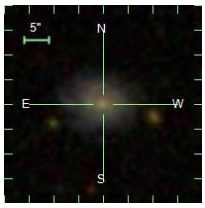

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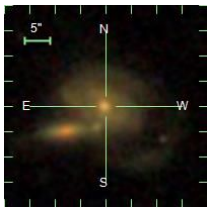

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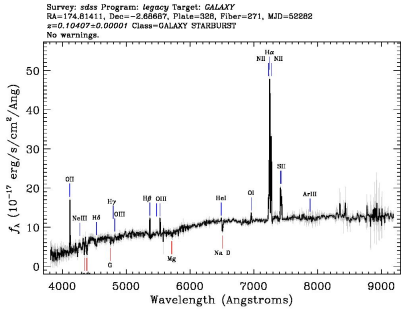

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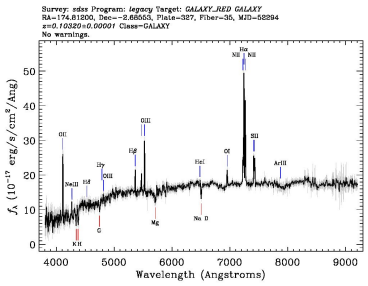
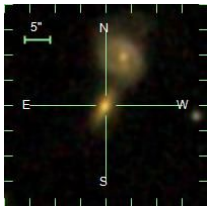


16.00

Soli …



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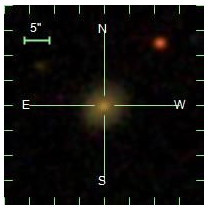
serial wide Ha agn qso broadline



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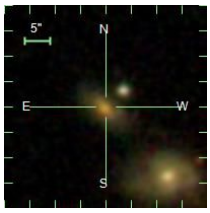

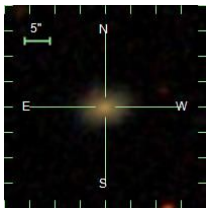

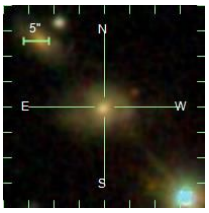

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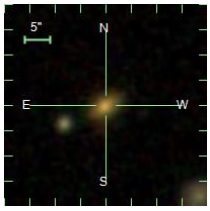
IN AND OUT soli



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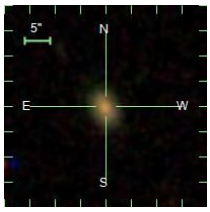

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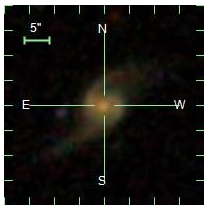

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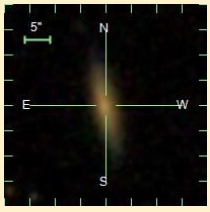

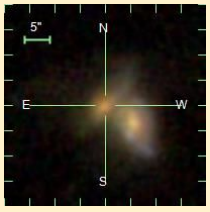

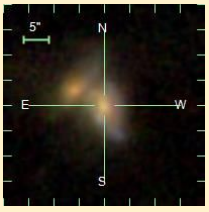

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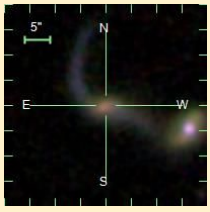

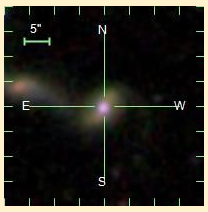

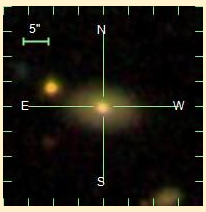

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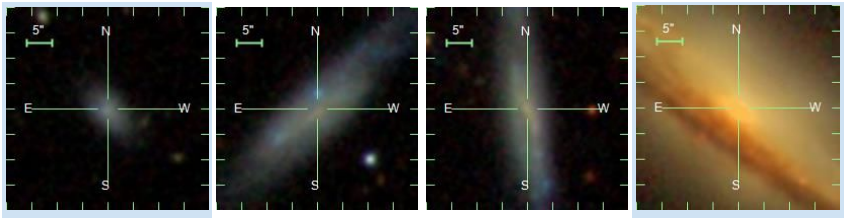

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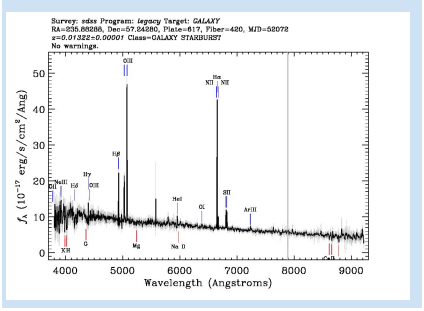
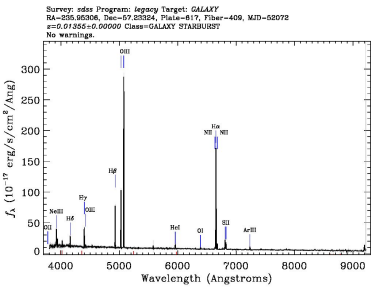
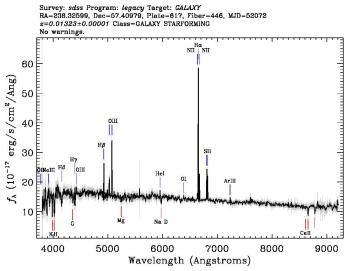
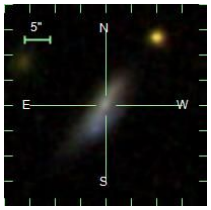
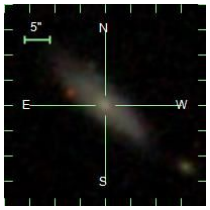




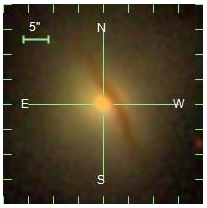




17.13

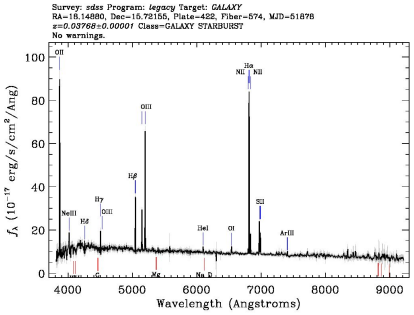


16.99



13.93 .037 .038

1237666214607389013 1237666214607388900 1237666214607388780



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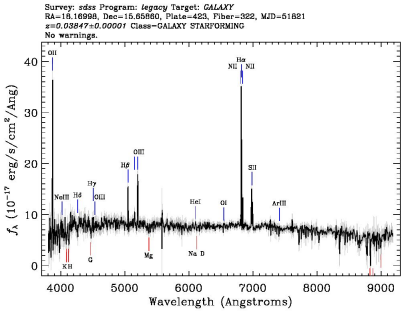
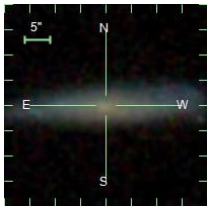
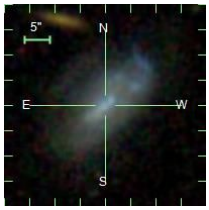


16.99

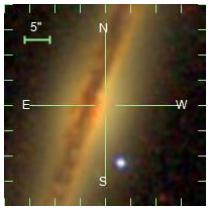
nunchucks …



15.95



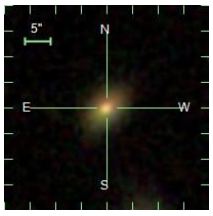
15.90

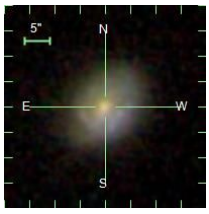


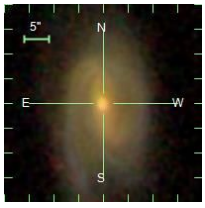
13.40 .017

1237678887985086695 1237678887985086481 1237678887985086509

serial

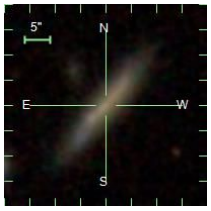


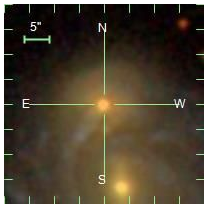




16.67 15.27 14.23 .037
1237649962458153092 1237652900772642897 1237652900772642971

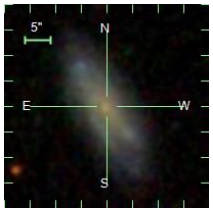
serial



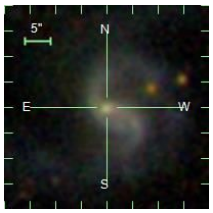


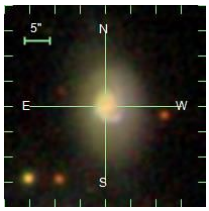
16.44 15.03 14.25 .030 .033 .034
1237666301638279660 1237666301638279614 1237666301638279613

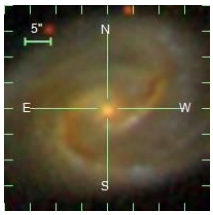
serial



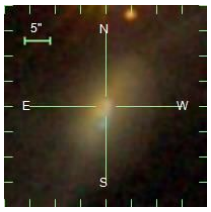
15.85 15.60 .032959 1237678880465355340 14.29’ cltg rdif=3.5

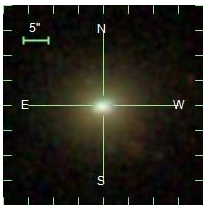


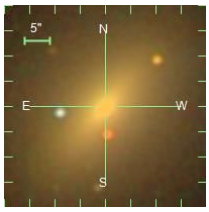




15.50 14.52 13.24 .032
1237678881002225936 1237678881002225768 1237678881002291599

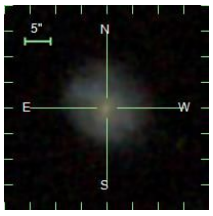




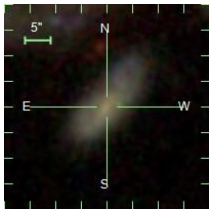


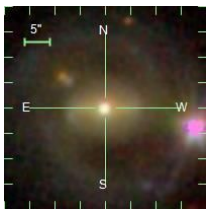
15.48 15.09 .015427 1237645941835694151 1.261’ cltg1
15.24 15.02 .015555 1237645941835694271 3.442’ cltg2
12.88 12.44 .015524 1237645941835694144 P1 rdifs=2.5s

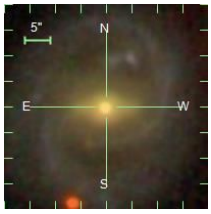
SERIAL **early clone**



16.54 16.30 .033000 1237667323788853392 5.752’ cltg rdif~2

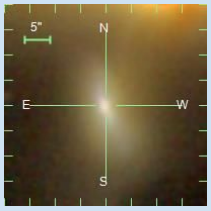


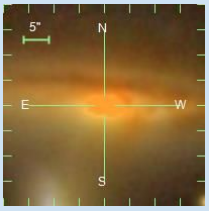
16.47


14.62


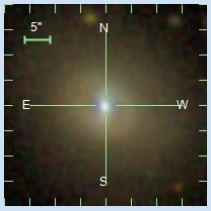
14.36 .032 .033
1237667323788853332 1237667323788853330 1237667323788853258

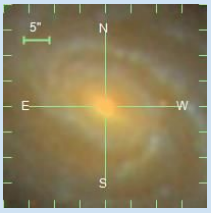
DUPLICATE COPY





redshift dead zone emergent
13.78 13.47 .015327 1237666308025679982 25.71” cltg1
12.58 11.96 .015434 1237666308025679980 P1-1 rdif=1.2





soli?
14.06 13.82 .015010 1237678580369588401 31.2’ ctlg2
12.16 11.77 .015134 1237678580906590258 P1-2 NE rdif=2

INDEPENDENT P1/C1 PAIRS

This topic would not be complete without recognizing that our families of objects aren’t all cookie-cutter arrays with cltg. Among the other arrangements we may find many isologous and heterogenous gapped pairs. Still others may qualify as solo objects that lack close companions that they can call family.

This item may be addressed in another work.

Many objects appear in DECaLS as divas when zoomed out with spectra option on.

An object with a family member gapped over an arc-hour at z.008 is much closer than one over z.03. (most families are arbitrarily defined as grouped in 30’ arcmin area) What we are finding is a significant number of objects (mostly late type) [see "klatch" in forum] that, without obvious other family members, exist as either solo or soli entities. Like the cltg, the solo objects 'blossomed' into the cosmos. Soli are 2-3 member families in close proximity. The formation of these objects are beyond the scope of this paper but require some input.

Ab initio ...

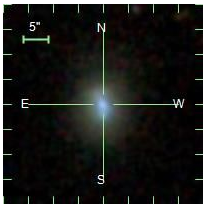
Move these qsos to nplanar … stick Arp’s book/objects in here?

Interesting assumptions about the cosmos. The fictive construct (cos·mos1 ˈkäzməs,ˈkäzˌmōs,ˈkäzˌmäs/ noun the universe seen as a well-ordered whole. "he sat staring deep into the void, reminding himself of his place in the cosmos" a system of thought. plural noun: cosmoses "the new gender-free intellectual cosmos") **bears the burden of subjective pitfalls**.

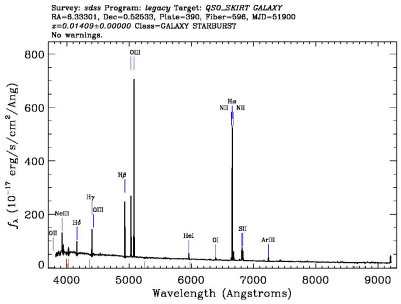
Every second we "expand" is not a 'place' totally foreign to us observers. Perhaps even a Higgs boson (in a newly minted space time milieu) arose to occupy an inflationary 'sub-atomic bubble'? Does (any) mass flow like flotsam from an ocean onto a shore or is it a part of all emergent processes like the one that made 2 trillion galaxies and ‘infuses’ the mass of 2 galaxies into the cosmos every day as it has for 14 billion years?

Solo objects emergent

15.91 .014 solo object representing the low redshift



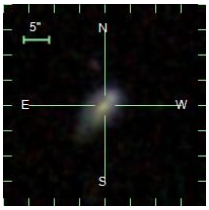
1237663716017111077



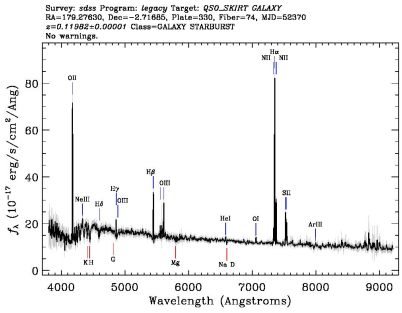
3M sbst

and

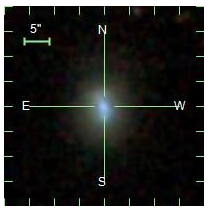
17.20 16.99 .119 solo object representing the high end redshift



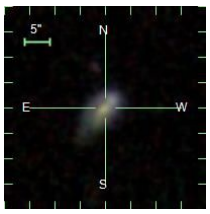
1237650761316499585



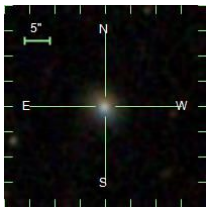
3M sbst



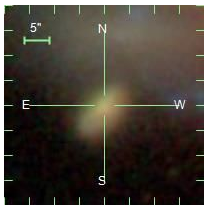
1237663716017111077



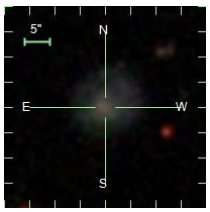
1237650761316499585



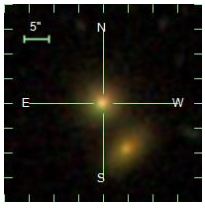
1237674648855052474



1237650762927308812



1237671127514415545



1237671127514415360

Soli few objects in group emerged

17.49 .021 solo object representing the low redshift 1237674648855052474 and

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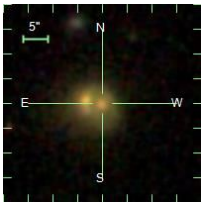
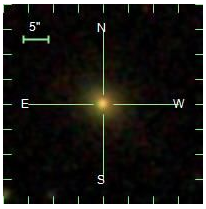
17.71 .072 soli family group representing the high end redshift 1237671127514415545.

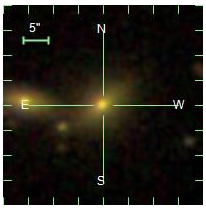
And lastly,



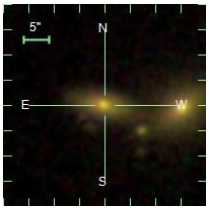
1237653500432482382
16.99 .123050 with an overlapping clone
[16.91 zunk 1237653500432482381]
a solo soli pair lacking peers in their part of the sky.



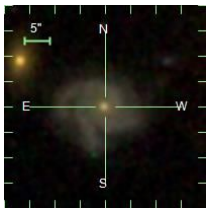
1237671763174752549



1237671265495482552



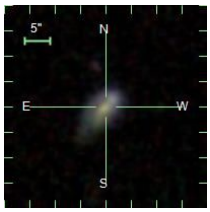
1237671265495482553
17.03, 16.53 and 16.91 ugriz and .122560, .122117, .124122 redshifts.



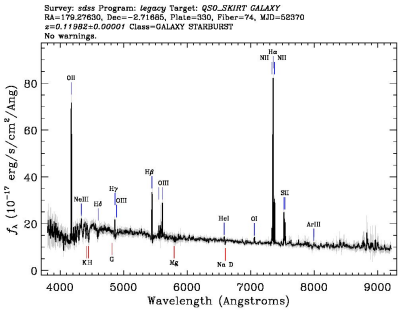
1237671140943397169

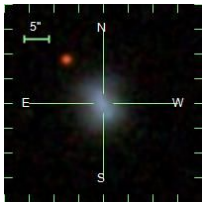
Many solo/soli in this paper

SOLO ….

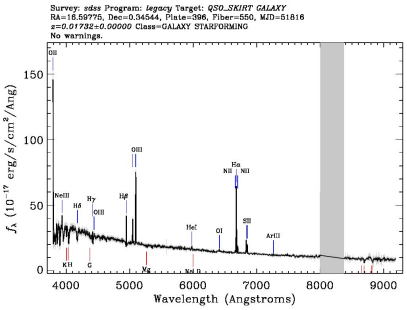


17.20 .119 1237650761316499585

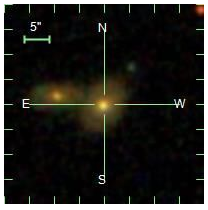




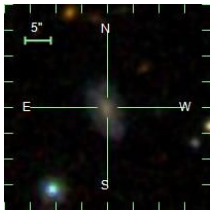
16.63 .017 1237666339725836420



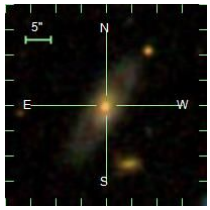
SOLI …



17.11 16.67 .119174 1237660024520769648



18.24



16.57 .085
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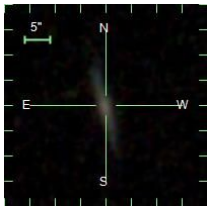
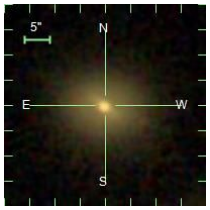


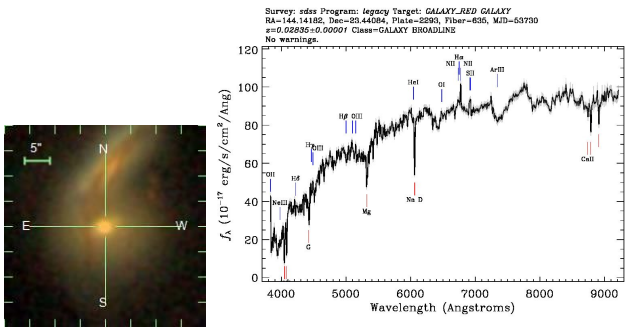
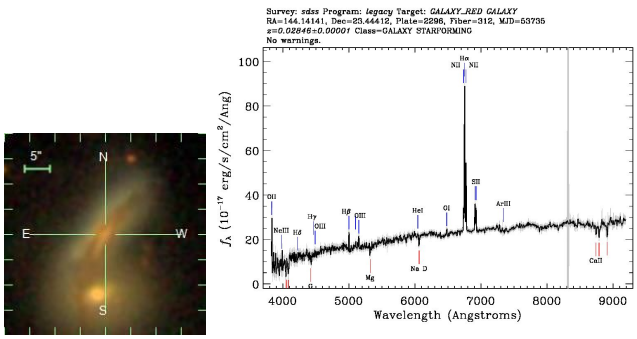
18.65



15.35 .033 GV
1237657189834162531 1237657189834162334

With cltg we see mostly emergent objects from P and C type family members but, might there be solos thrown in for good measure. Hence 'candidate cltg' if their data resides with solos more than family groups. A cltg at a large gap would qualify too. We are seeing emergent processes that may require two definitions. Obviously, there was a time when families were not around to make cltg but solo objects were the norm - for a short time anyway. We see many 'clones' of larger early objects which may be 'mature' soli and not a fission set - unless we define soli as emergent/fission objects from the get go.

DUSTORY TYPES WITH SHARED DUST LANE ACCENTUATING EMERGENT OBJECT

"**Dustory**" is our semantic choice for objects with dust history. We see this pattern (along with their idiosyncratic spectra) in many early pairs where the gap object is covered with dust while emerging from P1 environment. Velocity dispersion values 'raised' with dustory obscurity of non-P1. Note: There are cltg associated with this family. Link to the Dustory PDF for a more extensive library of these types of fission pirs. Link to abuse PDF to see zoo.inc gangbangers at work AND not recanting after given "emergent" evidence.	 14.87 .028386 1237667253999698059 P1 vd187.80  15.23 .028339 1237667253999698060 vd125.60