

**COSMOS-20:**  
**Strong emitter survey**  
— マスク領域指定作業の進展 —

2013.6.26

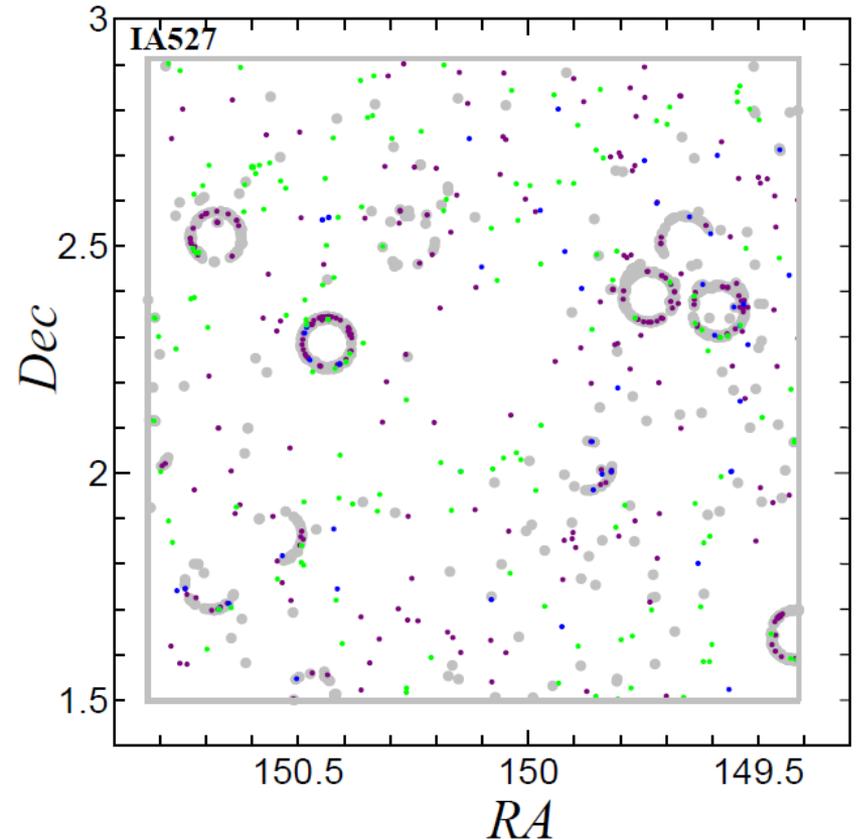
Yasuhiro Shioya

# 現在までの流れ(その1)

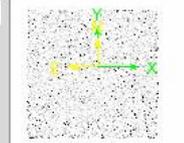
- Photometric data を用いて、**従来の方法で輝線天体候補を pre-selection**。ただし、今回は matched continuum の評価には、該当 IA バンドを含む broad bands は使用しない。
- Pre-selection した天体に対して、photo-z catalog の photo-z を採用して SED fit → **best-fit model SED を用いて continuum を再評価し、EW および  $L$  を評価**

# 現在までの流れ (その2)

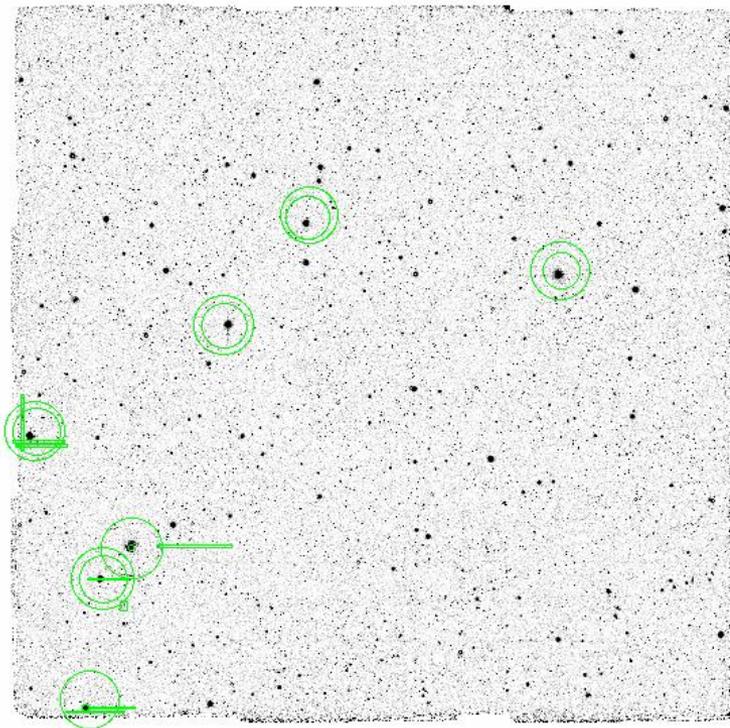
- しかし....  
輝線天体候補の位置  
をプロットすると、  
明るい天体のまわりに  
リング状に分布  
(右図はIA527 の例)  
→  
**最終サンプルを得る  
にはマスキングが必要**
- 過去1週間で、  
マスキングを行った  
(スライド4-15)



File COSMOS.IA427.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000



file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit

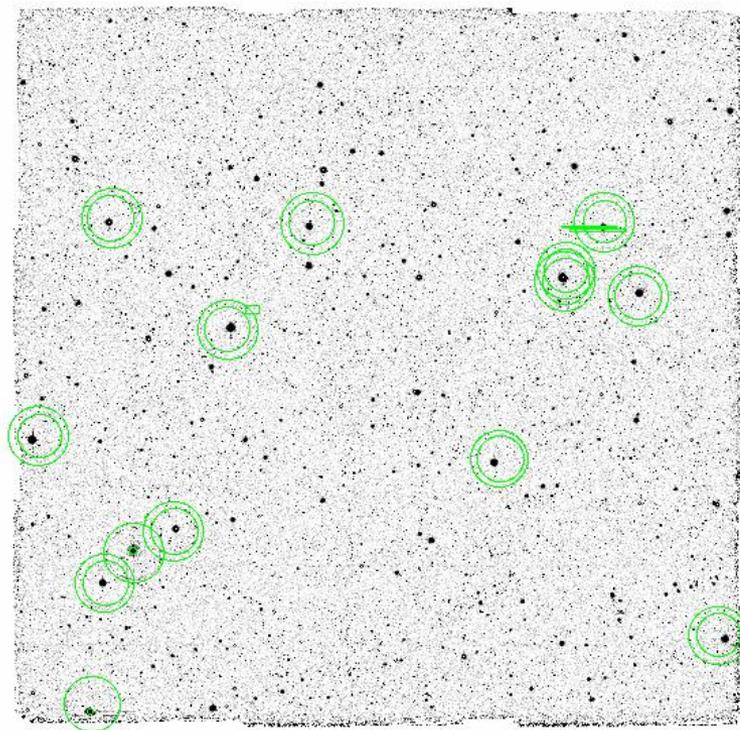


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA464.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000



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File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA484.original-psf.v1.fits

Object COSMOS

Value

WCS

Physical X

Y

Image X

Y

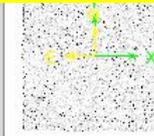
Frame 1

Zoom

0.015

Angle

0.000



file

edit

view

frame

bin

zoom

scale

color

region

wcs

help

fk4

fk5

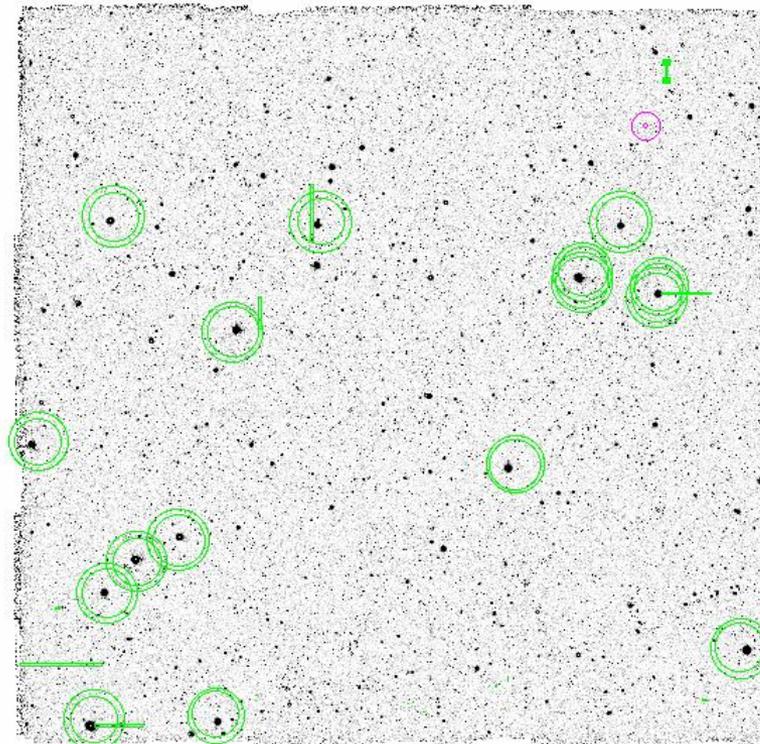
icrs

galactic

ecliptic

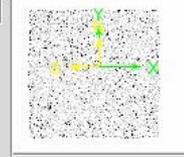
degrees

sexagesimal

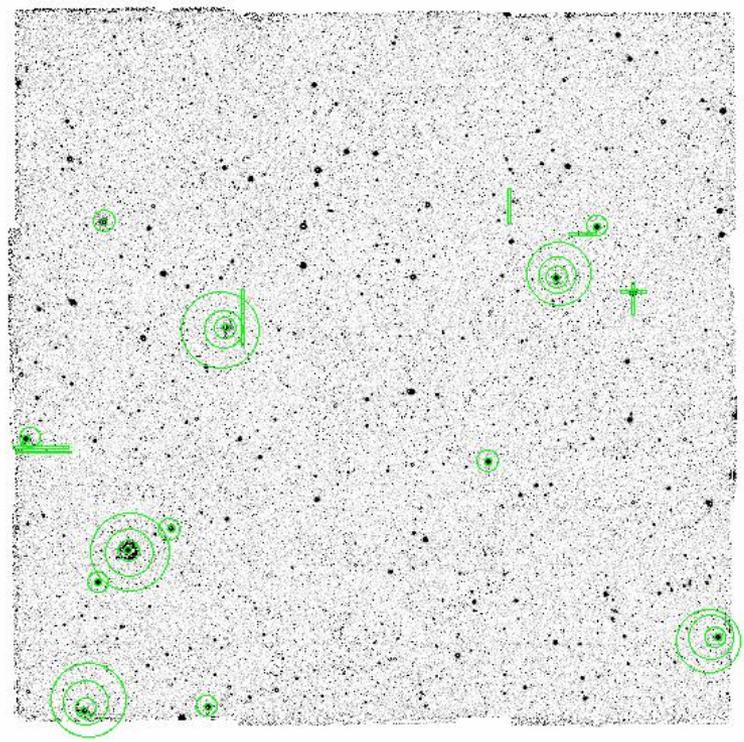


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA505.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000

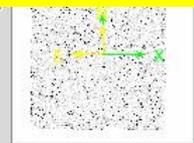


file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit

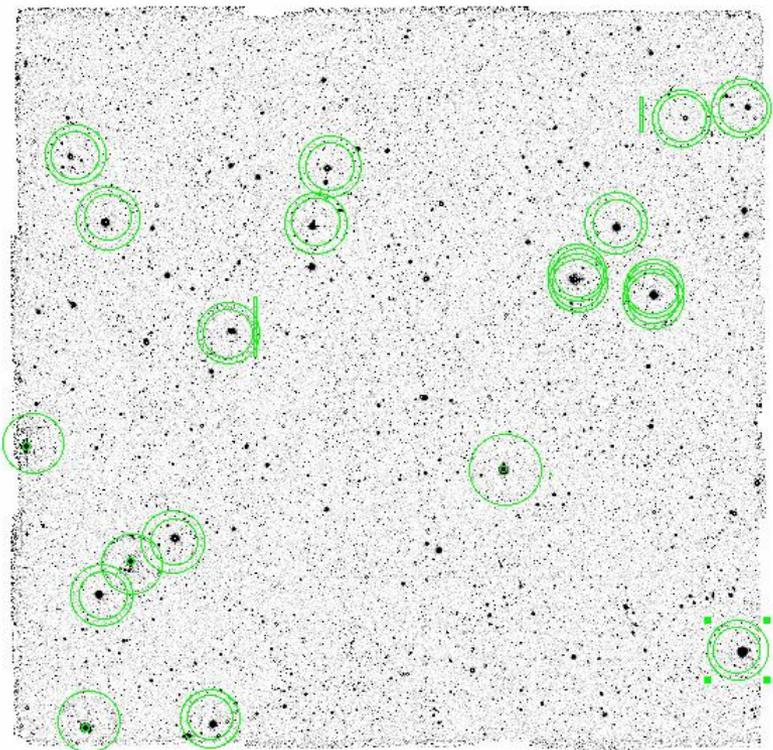


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA527.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000



file	edit	view	frame	bin	zoom	scale	color	region	wcs	help
fk4		fk5	icrs	galactic		ecliptic		degrees		sexagesimal



File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA574.original-psf.v1.fits

Object COSMOS

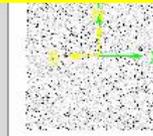
Value

WCS

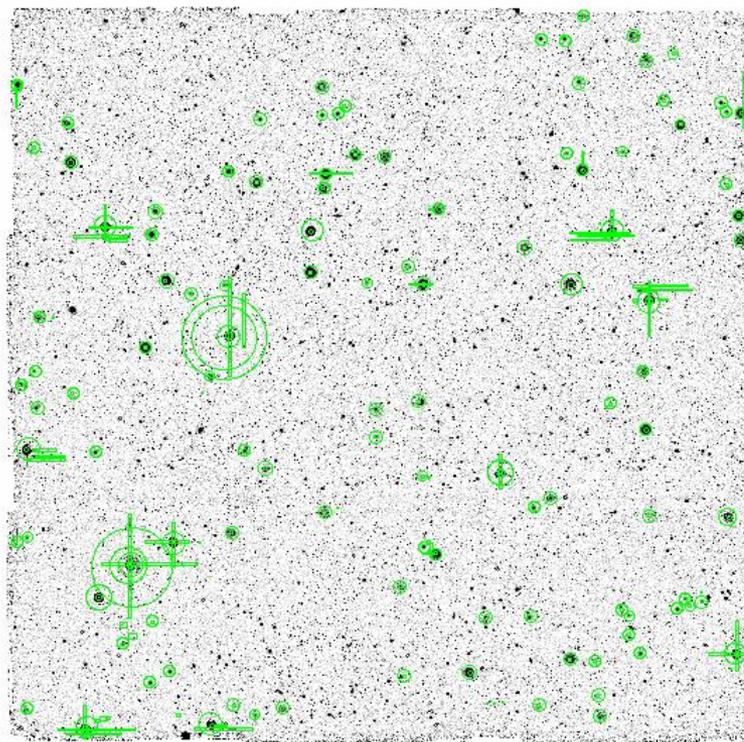
Physical X Y

Image X Y

Frame 1 Zoom 0.015 Angle 0.000



file	edit	view	frame	bin	zoom	scale	color	region	wcs	help
about	open	save image	header	page setup	print	exit				

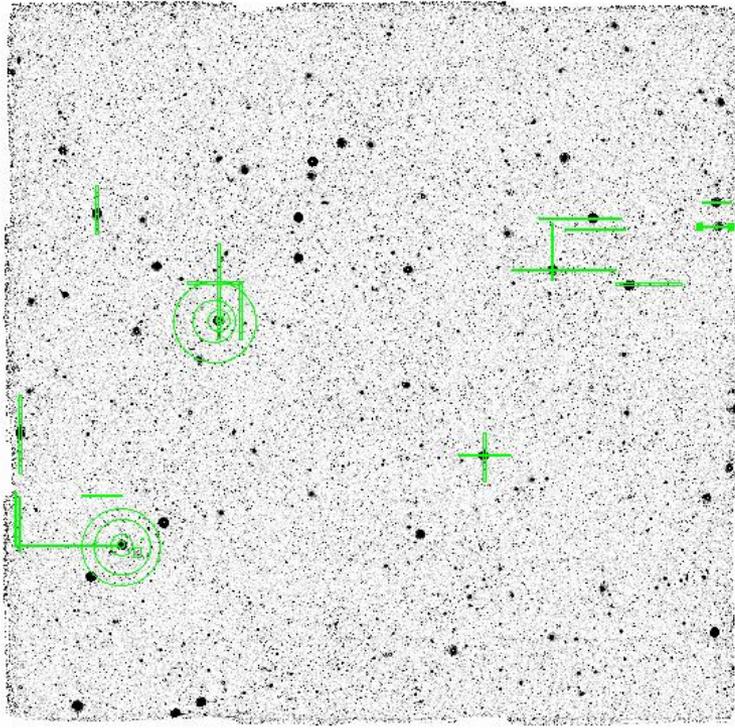


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA624.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000

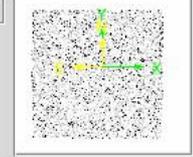


file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit

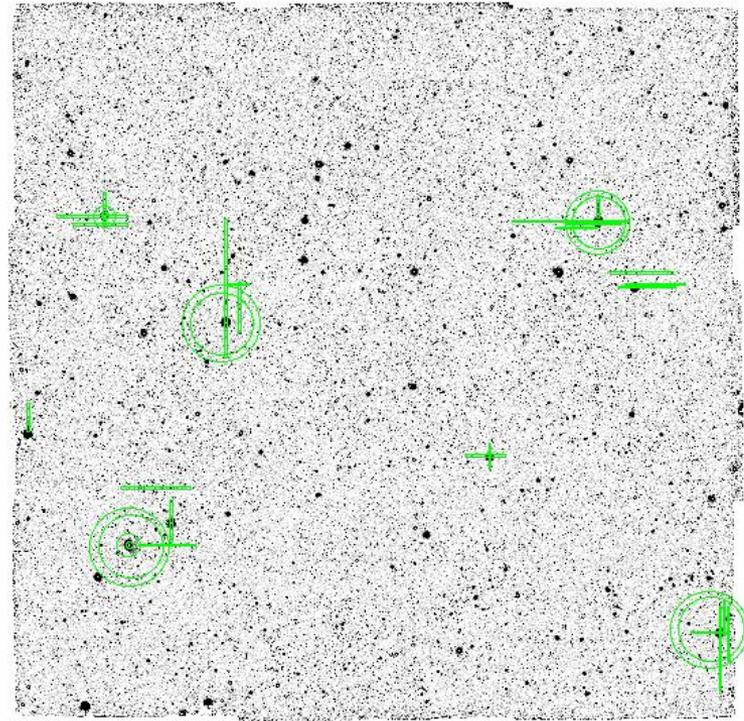


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA679.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000

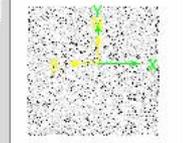


file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit

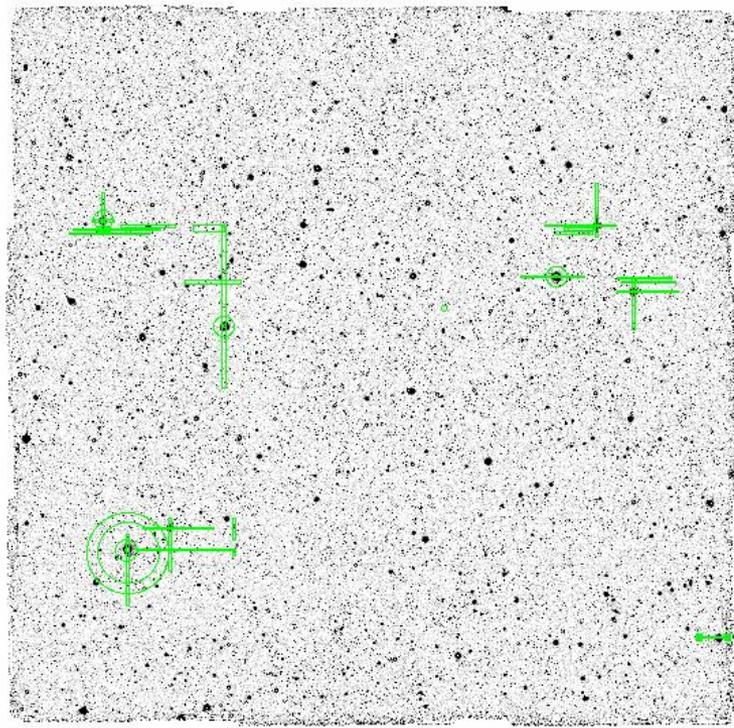


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA709.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000



file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit



File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA738.original-psf.v1.fits

Object COSMOS

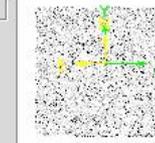
Value

WCS

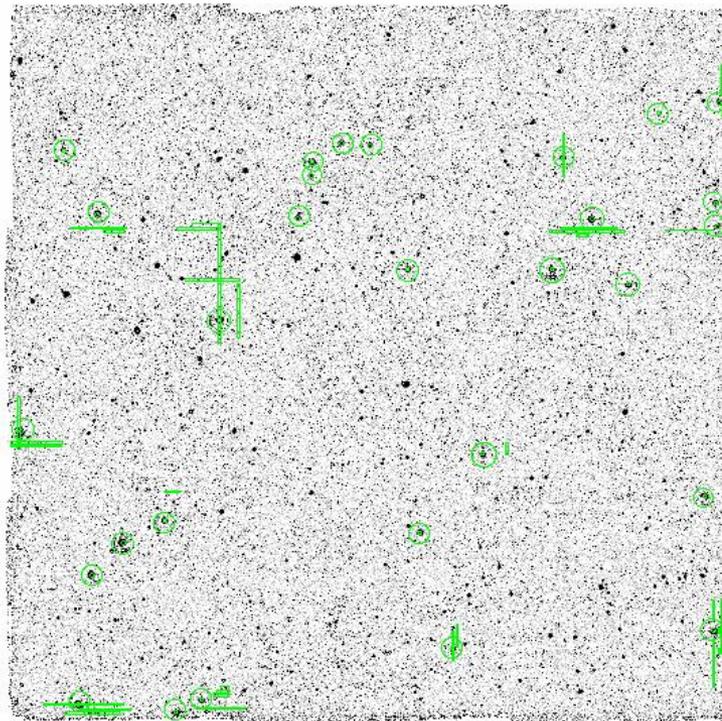
Physical X Y

Image X Y

Frame 1 Zoom 0.015 Angle 0.000

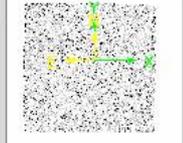


file	edit	view	frame	bin	zoom	scale	color	region	wcs	help
about	open	save image	header	page setup	print	exit				

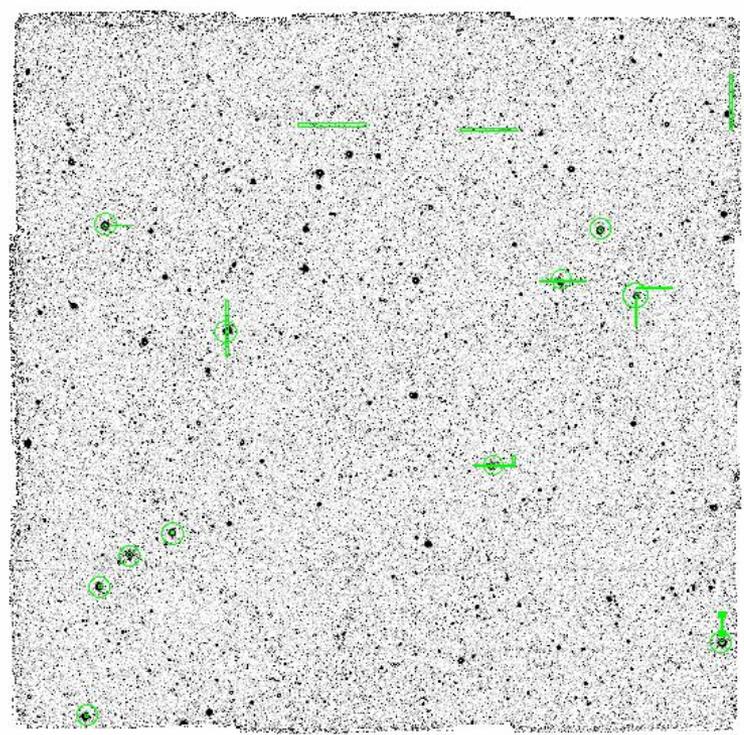


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA767.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000

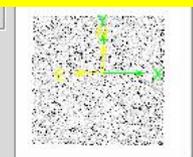


file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit

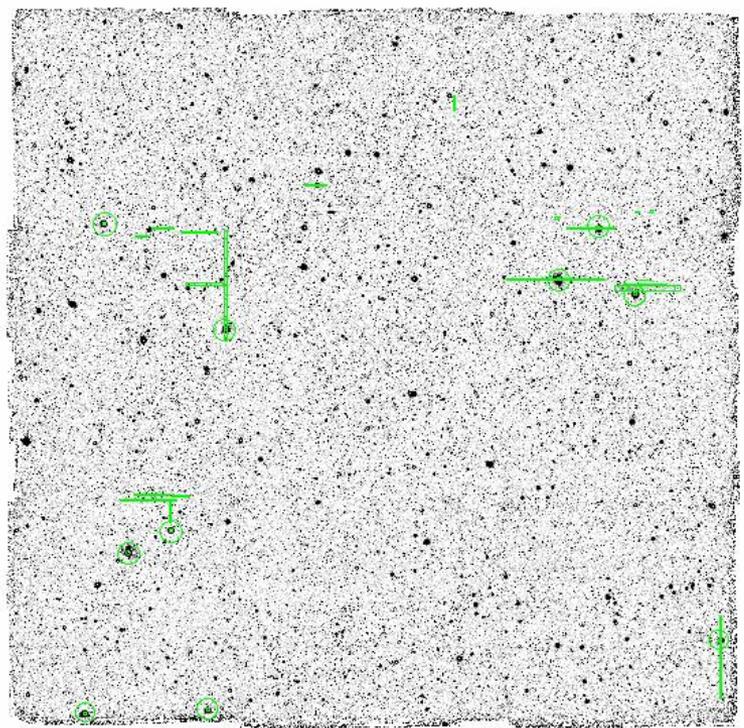


File Edit View Frame Bin Zoom Scale Color Region WCS Analysis

File COSMOS.IA827.original-psf.v1.fits  
Object COSMOS  
Value  
WCS  
Physical X Y  
Image X Y  
Frame 1 Zoom 0.015 Angle 0.000



file edit view frame bin zoom scale color region wcs help  
about open save image header page setup print exit



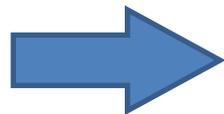
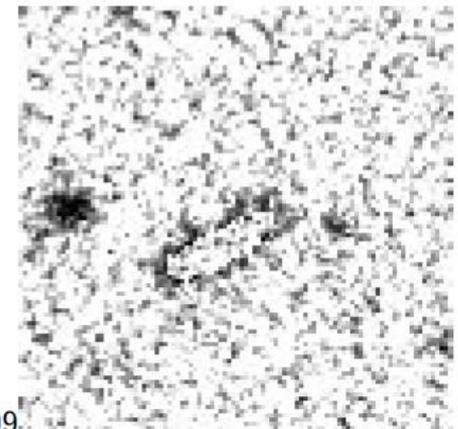
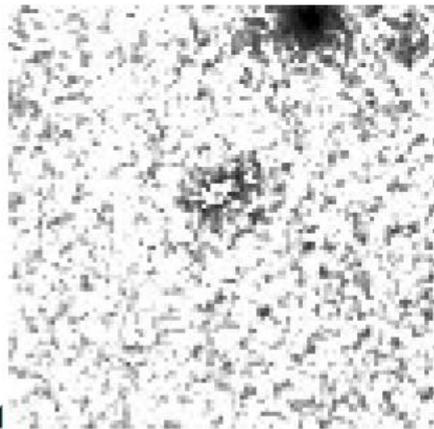
新たに設定したマスク領域の天体を除いた数  
(thumbnailsの確認をする前)  
(2013.6.24現在)

filter	Ly $\alpha$	[OII]	[OIII]+H $\beta$	H $\alpha$ + [NII]	それ以外
IA427	302	196	x	x	180
IA464	161	58	x	x	178
IA484	207	30	x	x	159
IA505	128	90	41	x	164
IA527	129	27	132	x	108
IA574	32	40	300	x	208
IA624	46	90	530	x	279
IA679	9	12	430	245	63
IA709	3	12	480	382	60
IA738	8	94	606	696	101
IA767	5	63	665	565	62
IA827	1	70	982	882	48

# 新たなマスキングをして選び直した 天体の thumbnails を確認

明るい天体の周りのゴーストにマスクしただけでは、  
以下に示すような領域(移動天体の影響を受けている場所)  
をマスクしきれない → マスク領域に加える

IA464\_nonE の例



最終サンプル

# 今後行うこと

1. マスク領域を fix し、サンプルを fix する。
2. 上で得た“その他”のサンプルが、
  - a. Photo-z の誤差を考慮したときに Ly $\alpha$ , [OII], [OIII] + H $\beta$ , H $\alpha$  + [NII] といった輝線の可能性があるか
  - b. Best-fit model SED に対する color excess の significance を適当に選ぶことで (例えば 2 $\sigma$  を 3 $\sigma$  にすることで) 除去できるのか否かを確認 → significance の値を決める
3. サンプルの等価幅および光度分布を作成
4. それらを見て、今回の方法で適切にサンプルを選んでいるか否かを確認

次回の打ち合わせでは、上記について議論したいと思います