

Greyscale, Color & Special Images

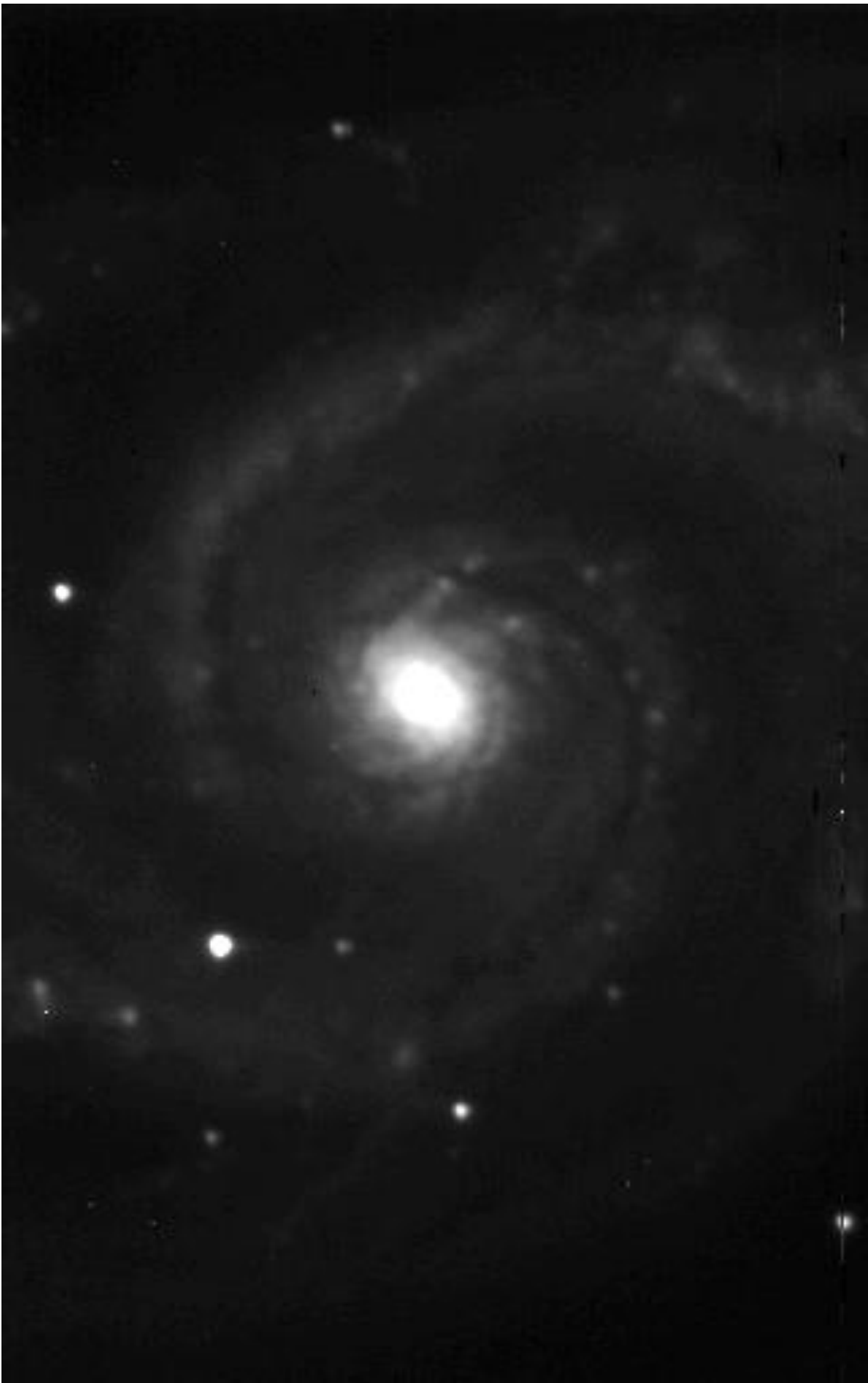
Image Processing & Analysis for Life Scientist

Romain Guiet, Olivier Burri & Arne Seitz

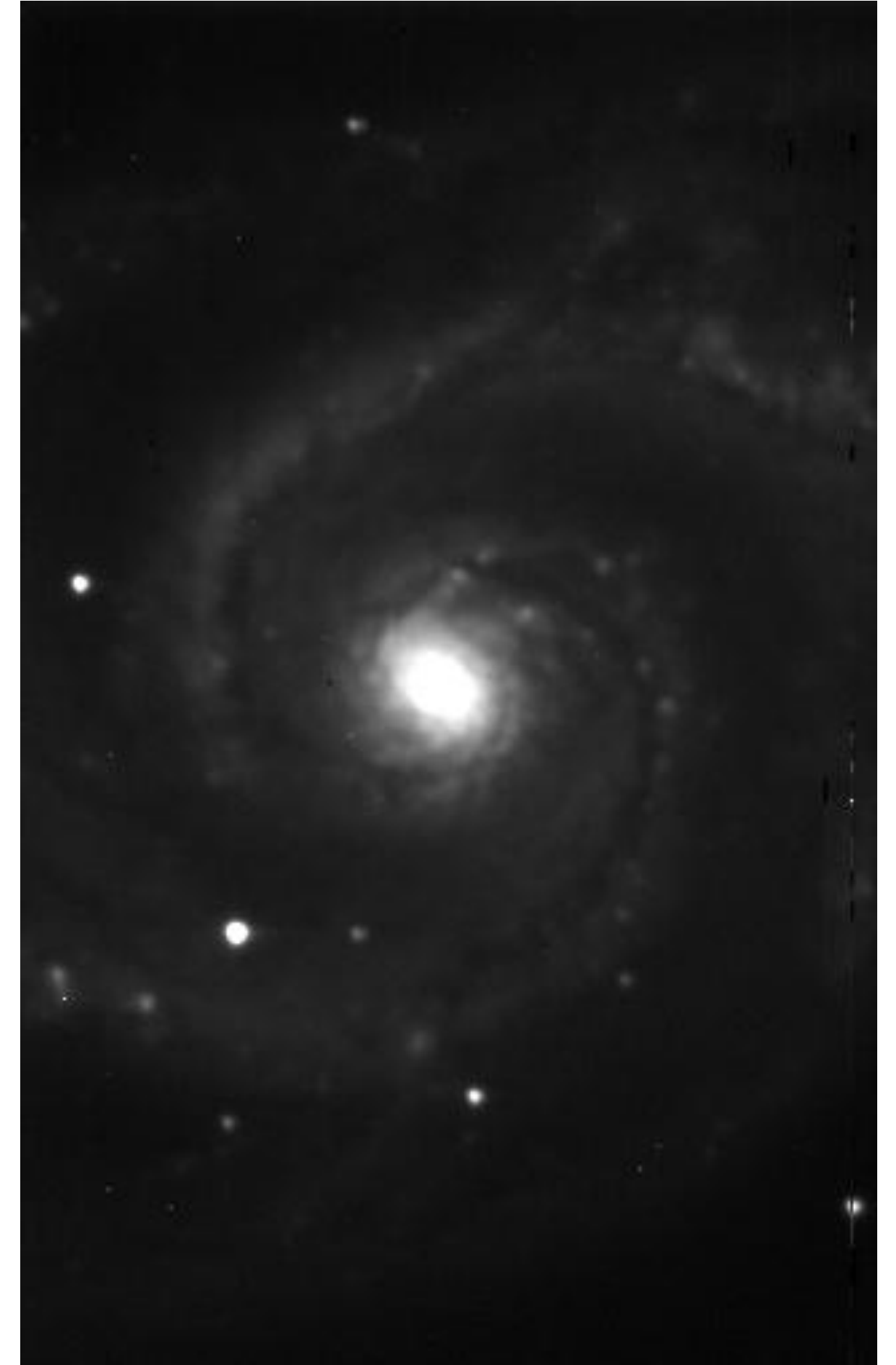
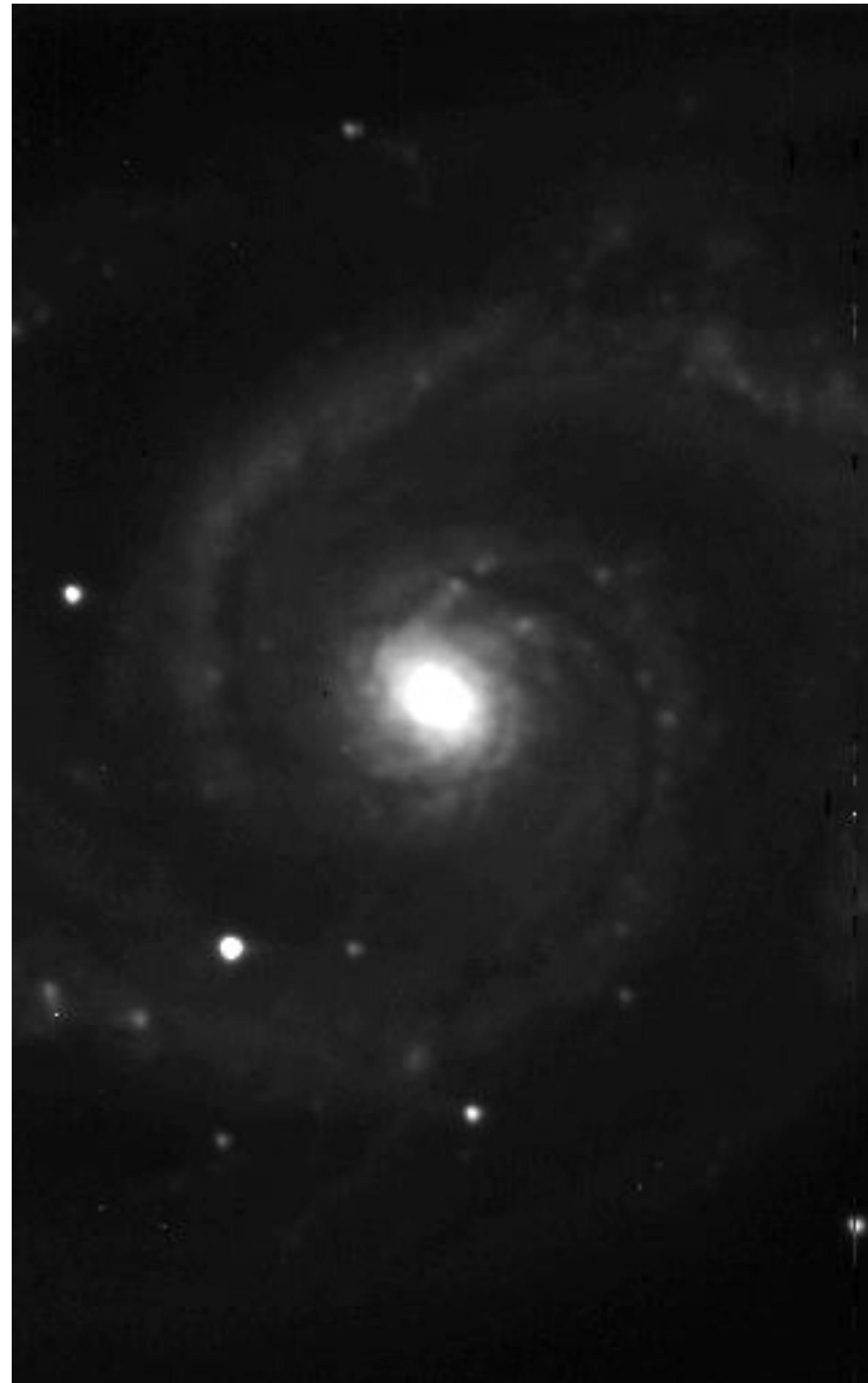
Summary

Grey scale images

Bits/Pixel	Range
1	0 or 1
8	0, 1, ...255
12	0, 1, ...4096
14	0, 1, ...16383
16	0, 1, ...65535

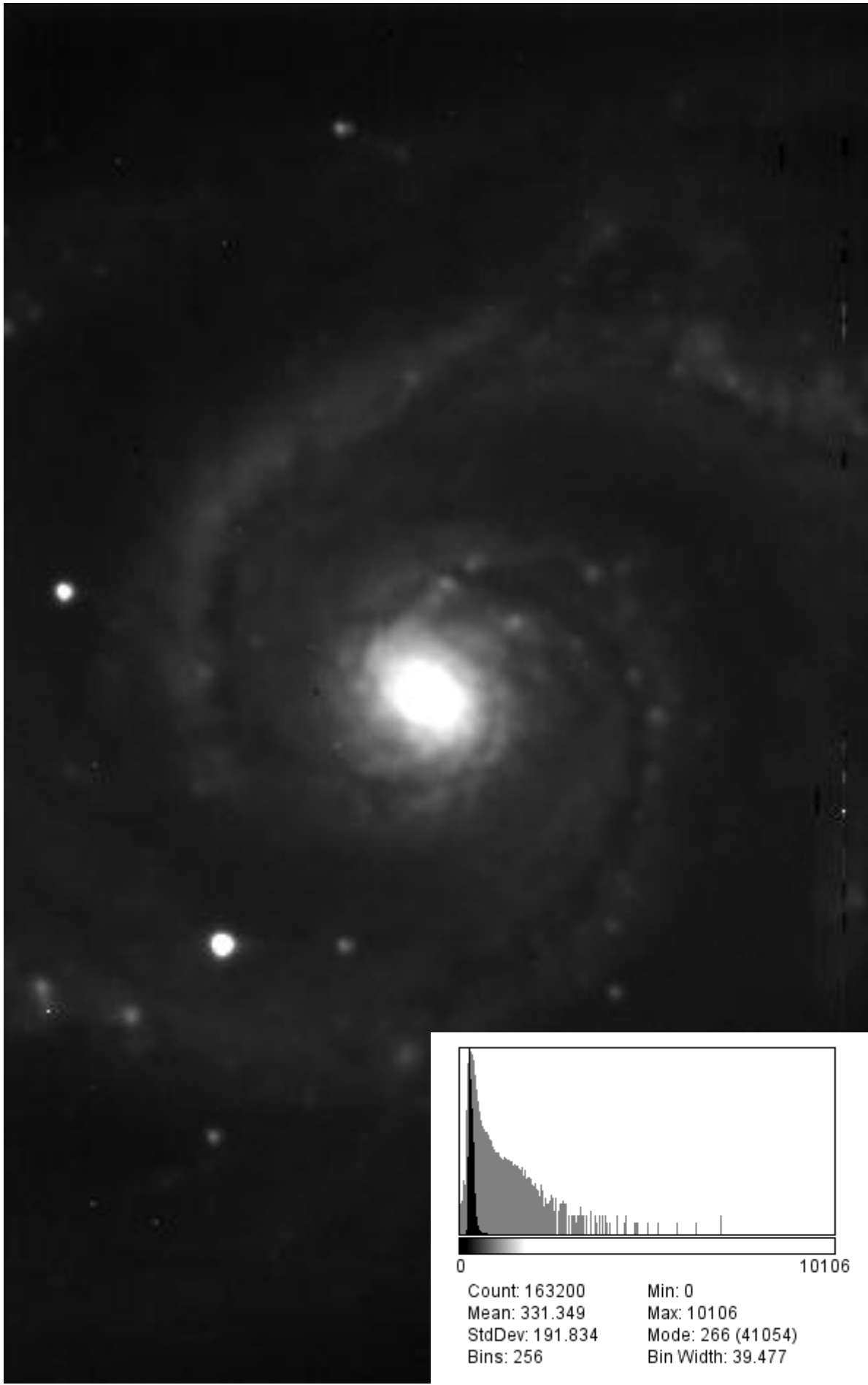
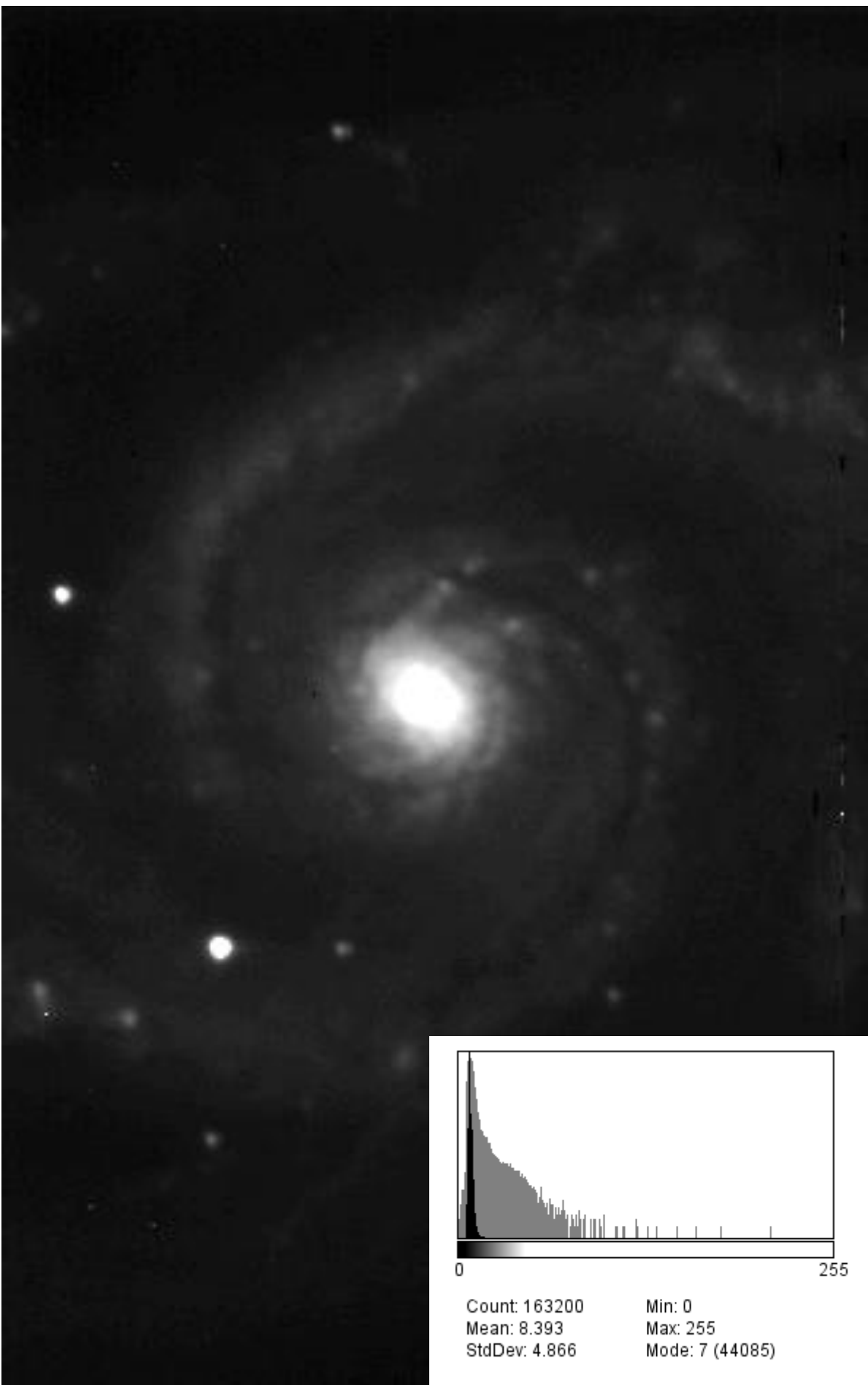


Grey scale images



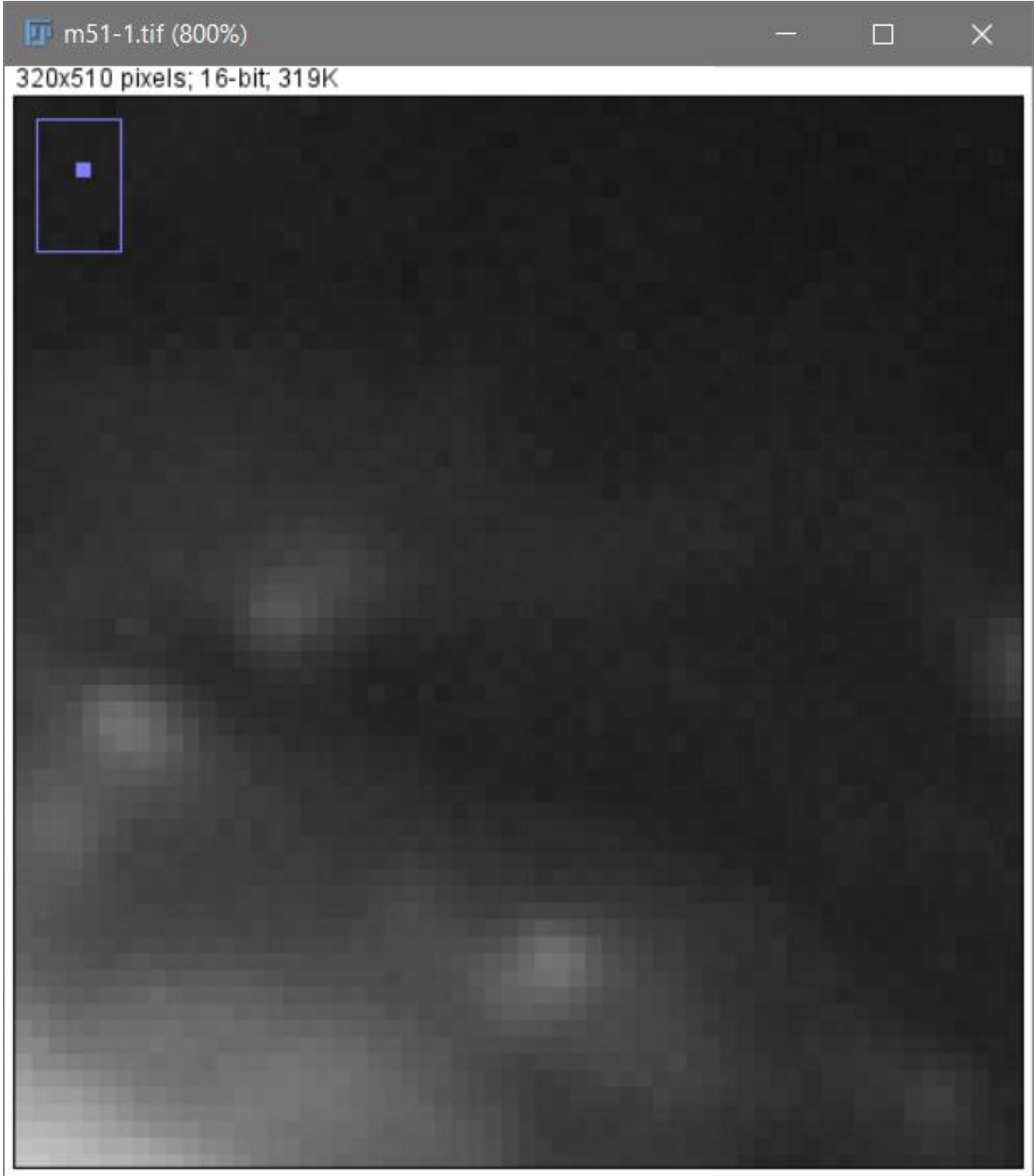
Grey scale images

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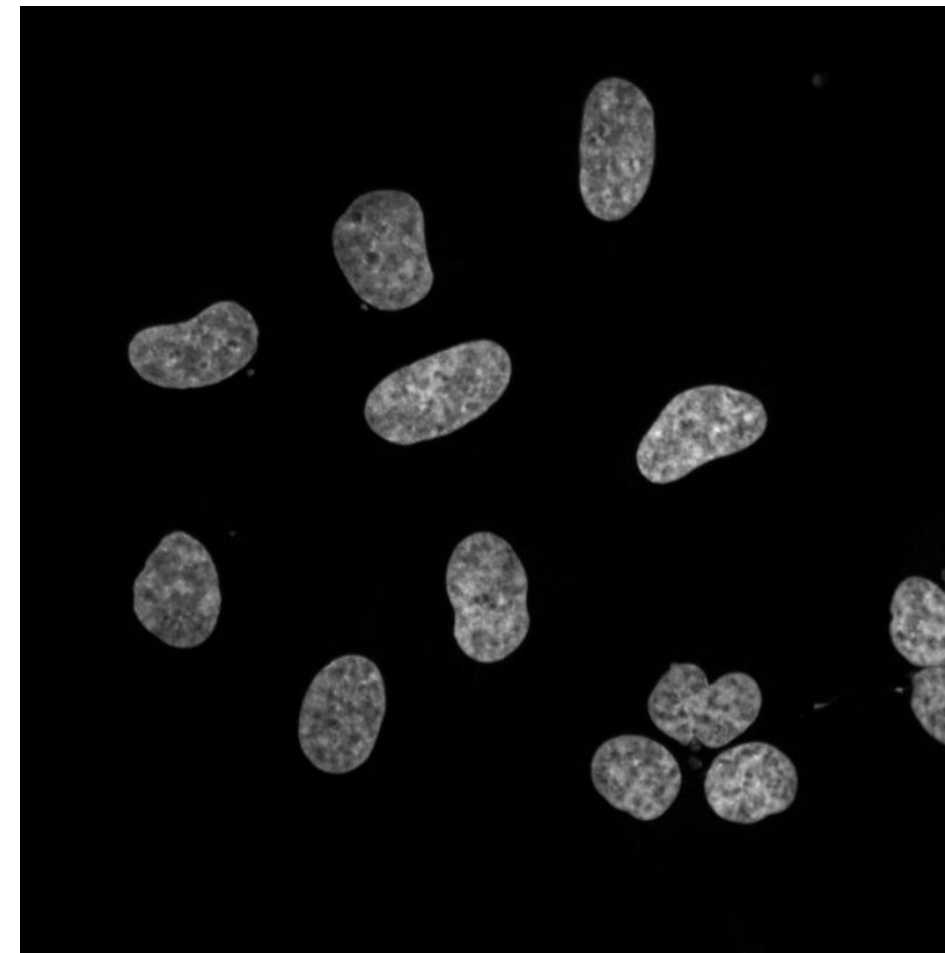
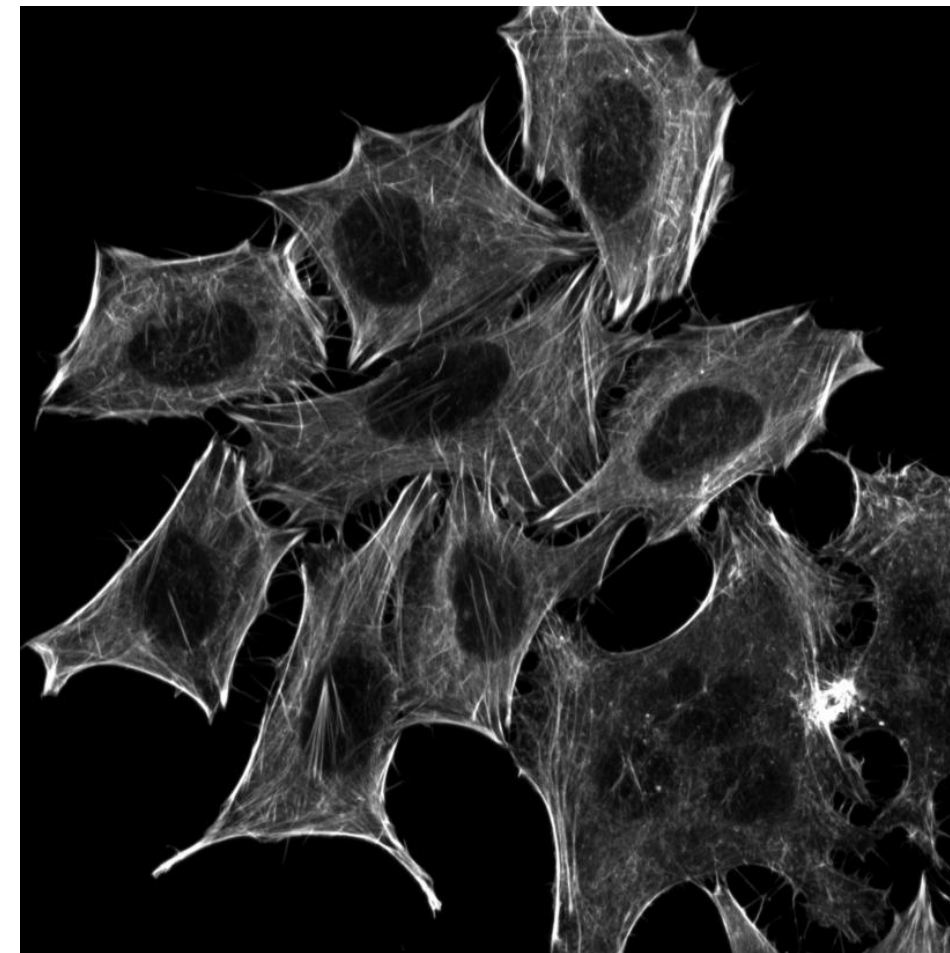
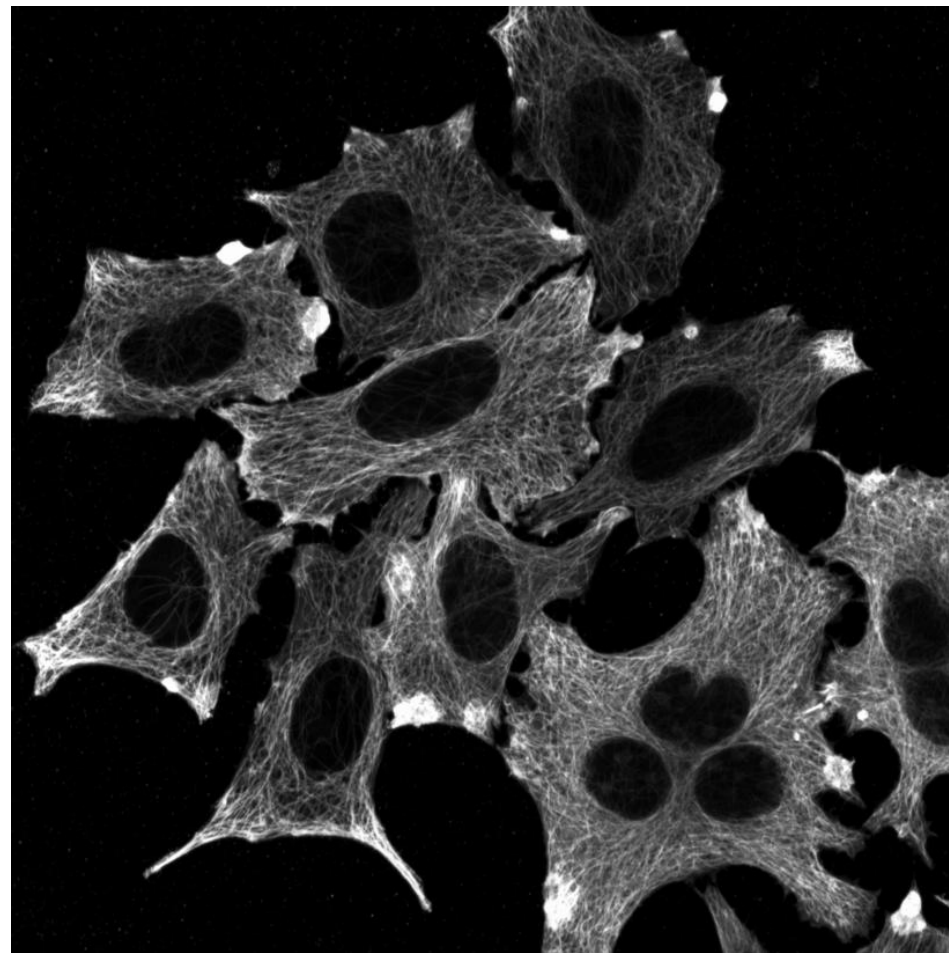


Grey scale images

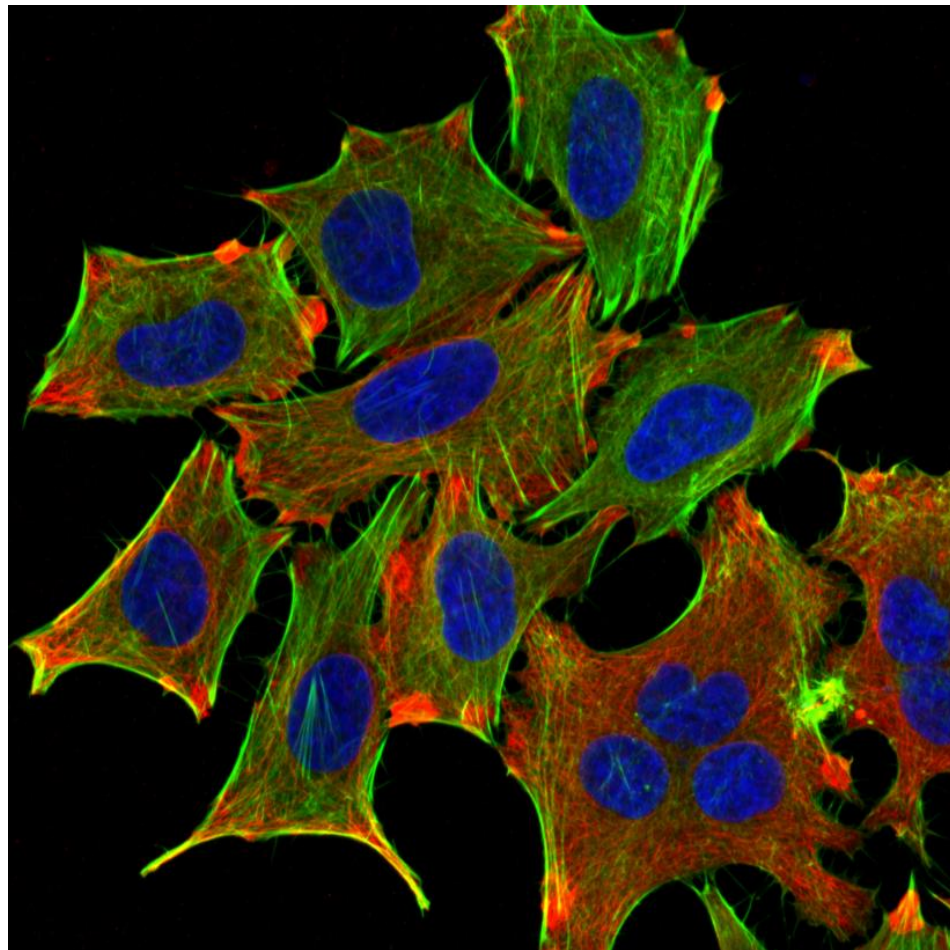
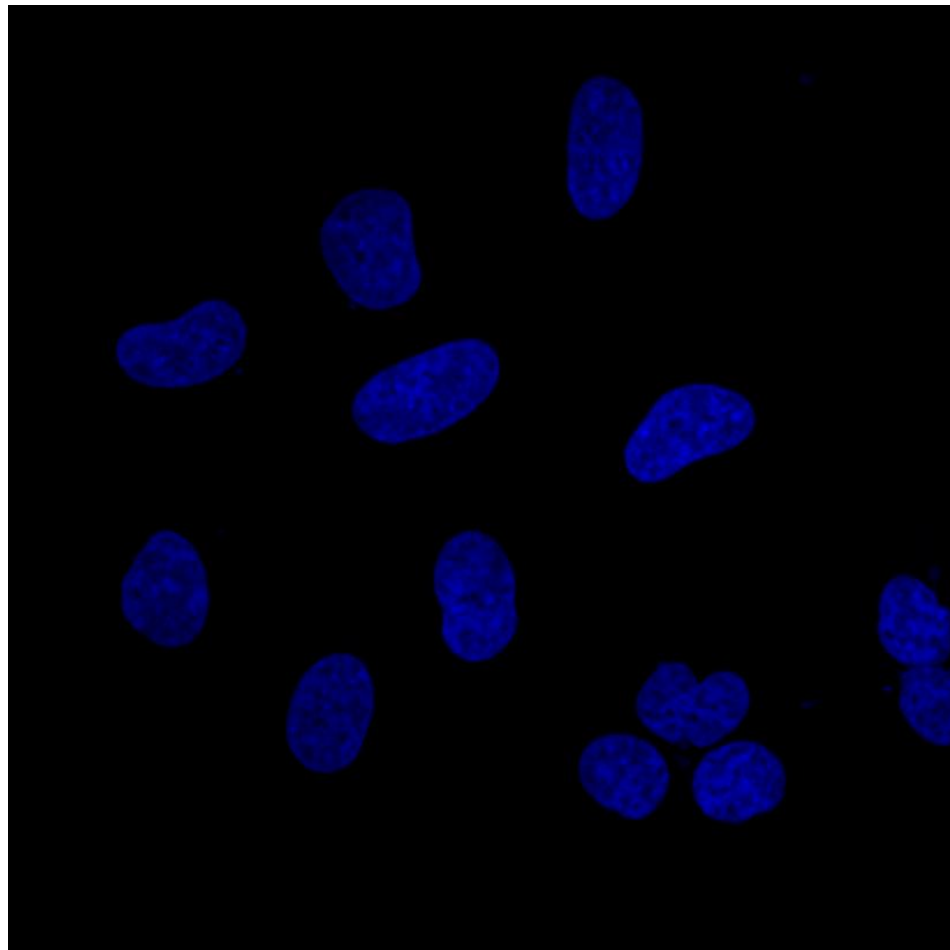
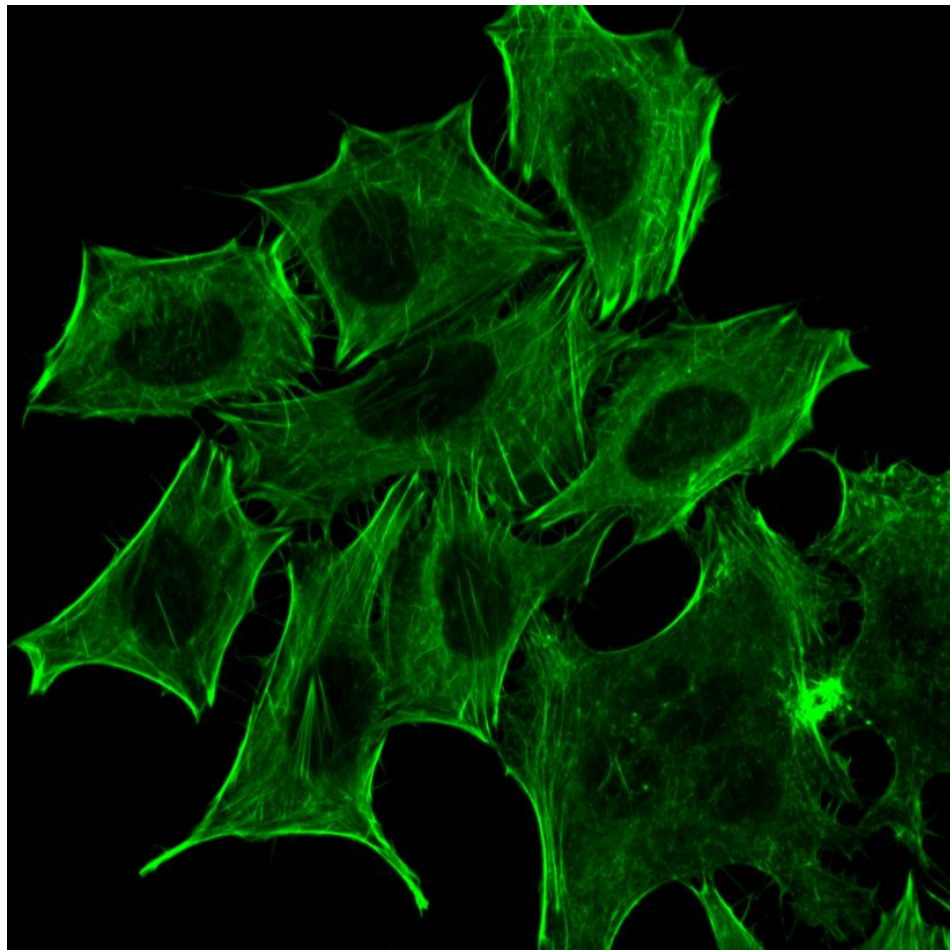
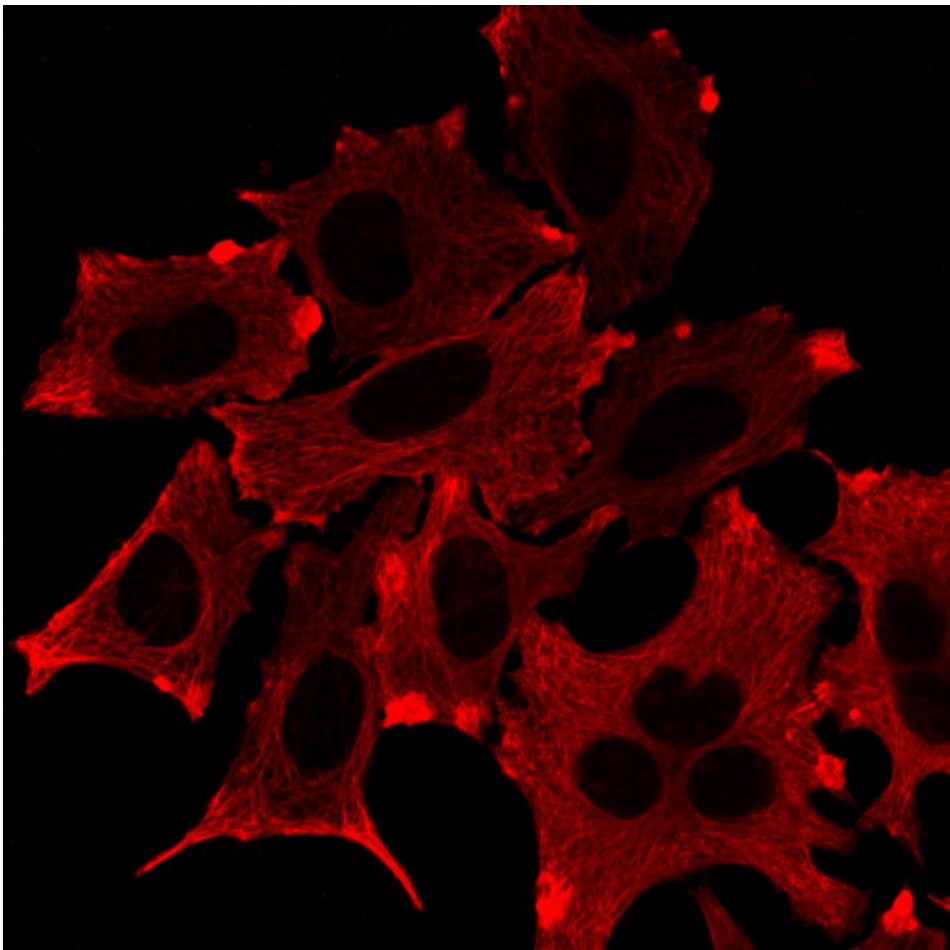
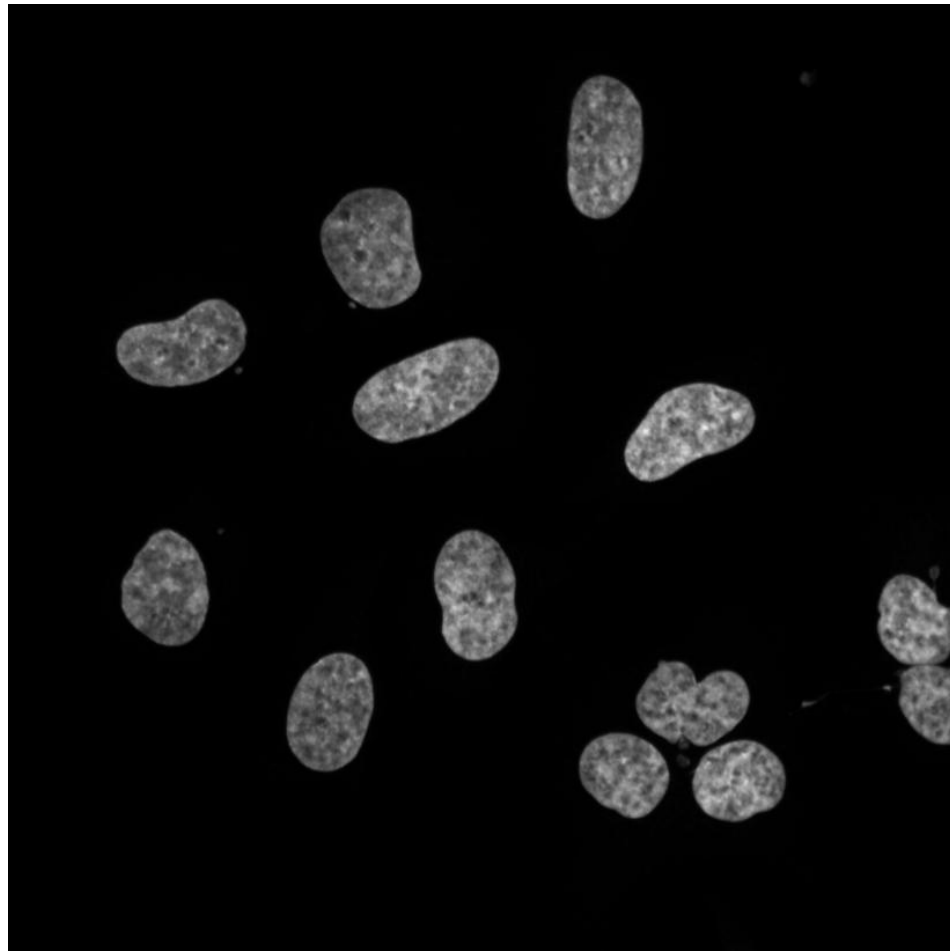
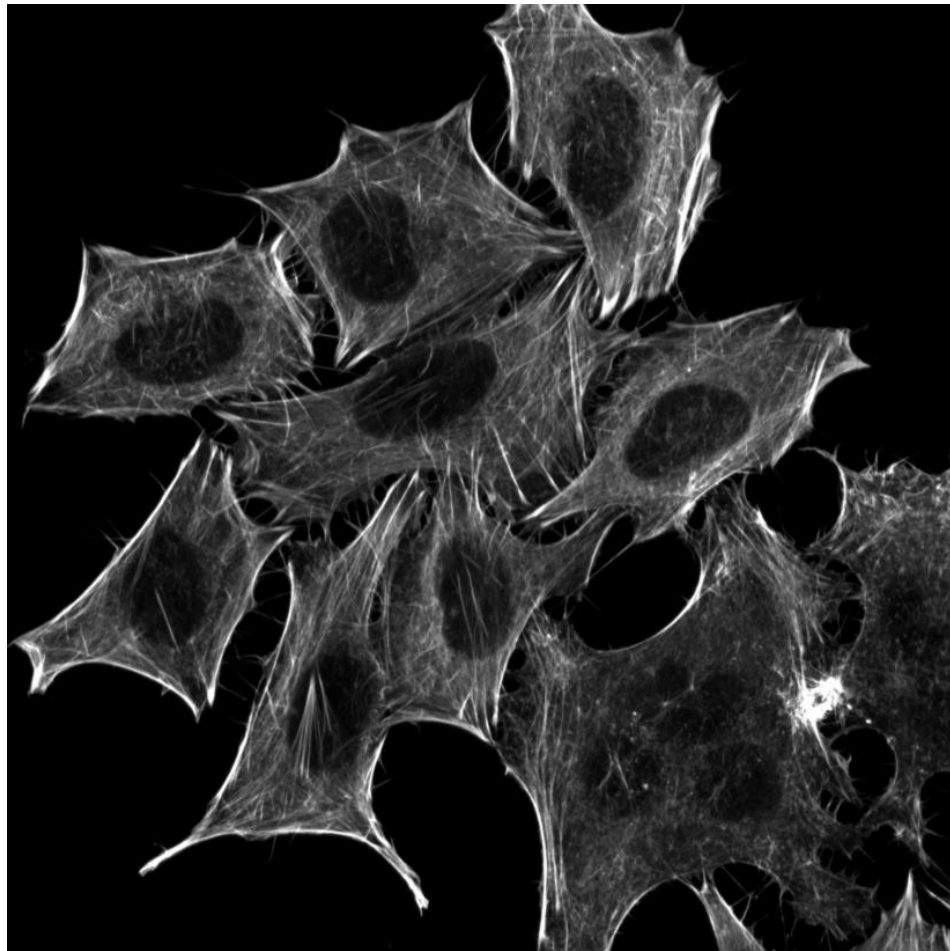
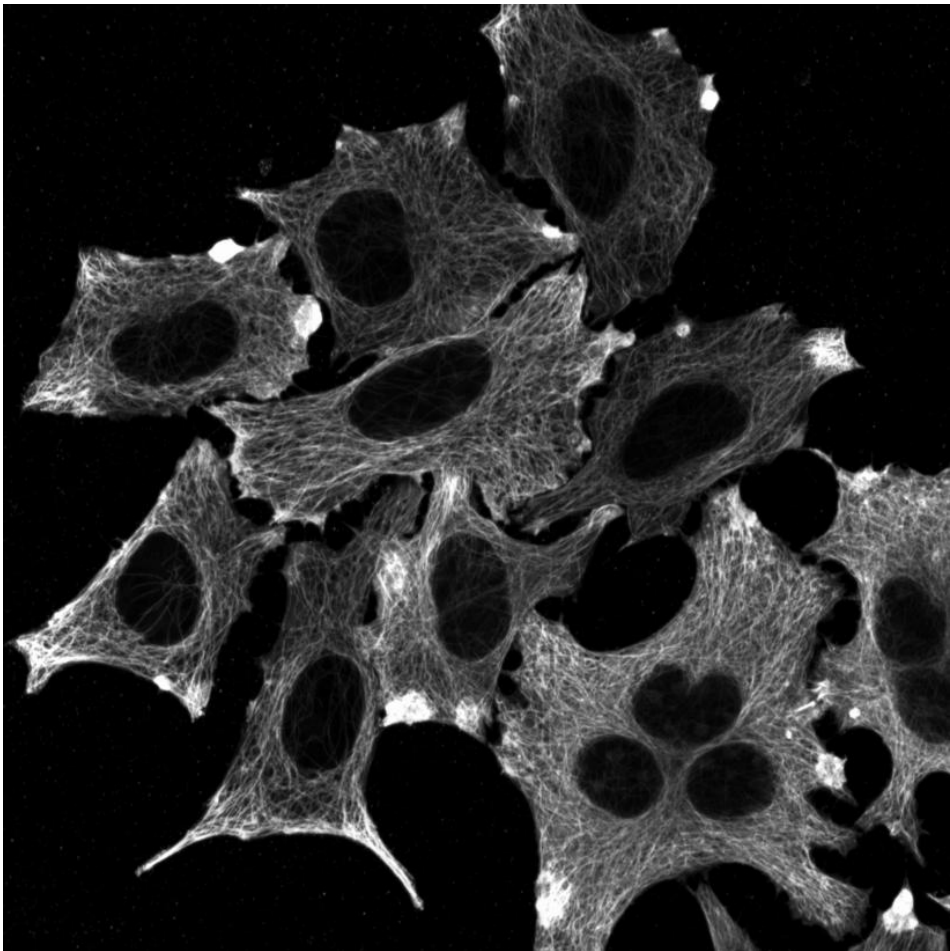
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From Grey to Color Images

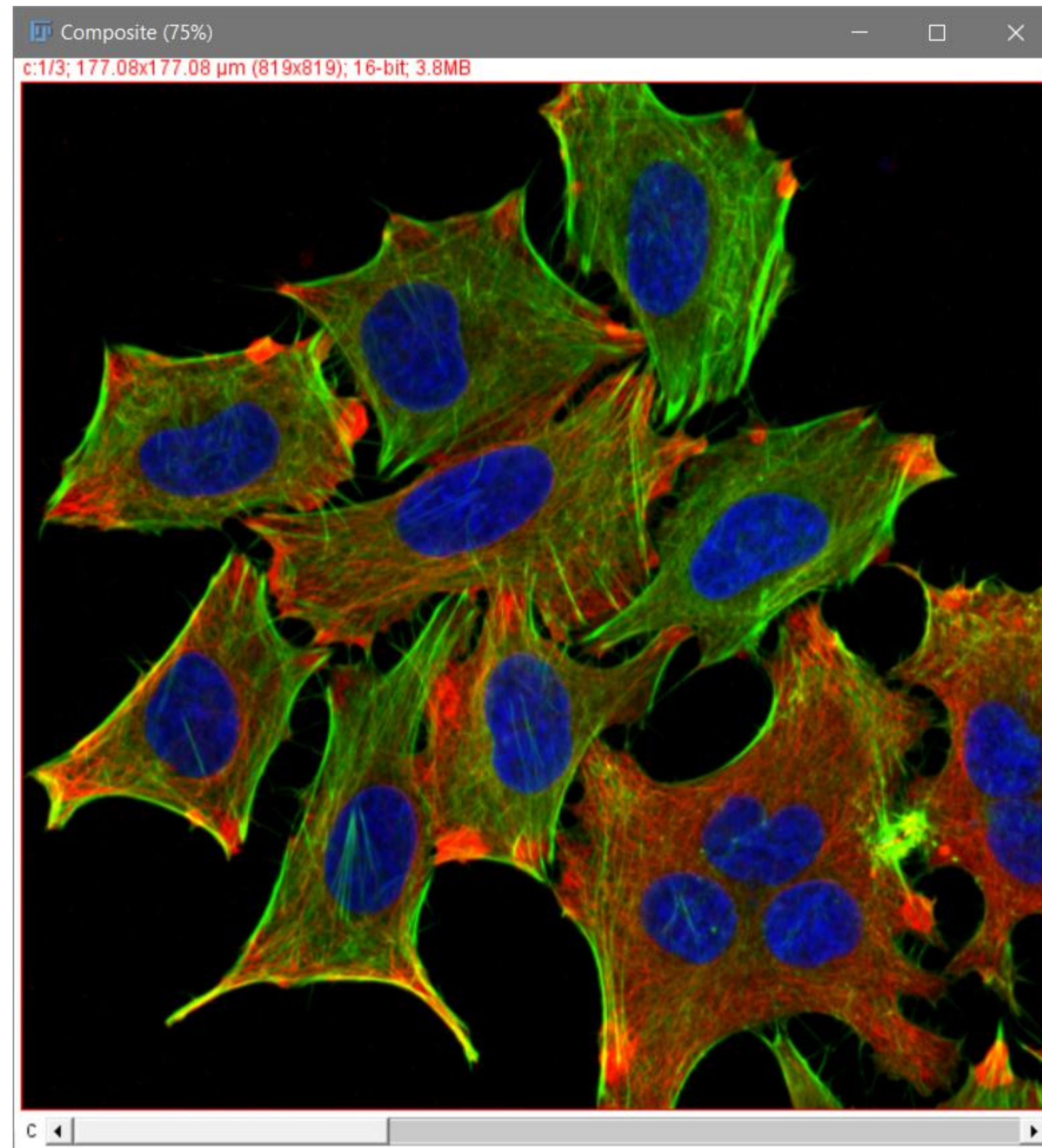


Color Images

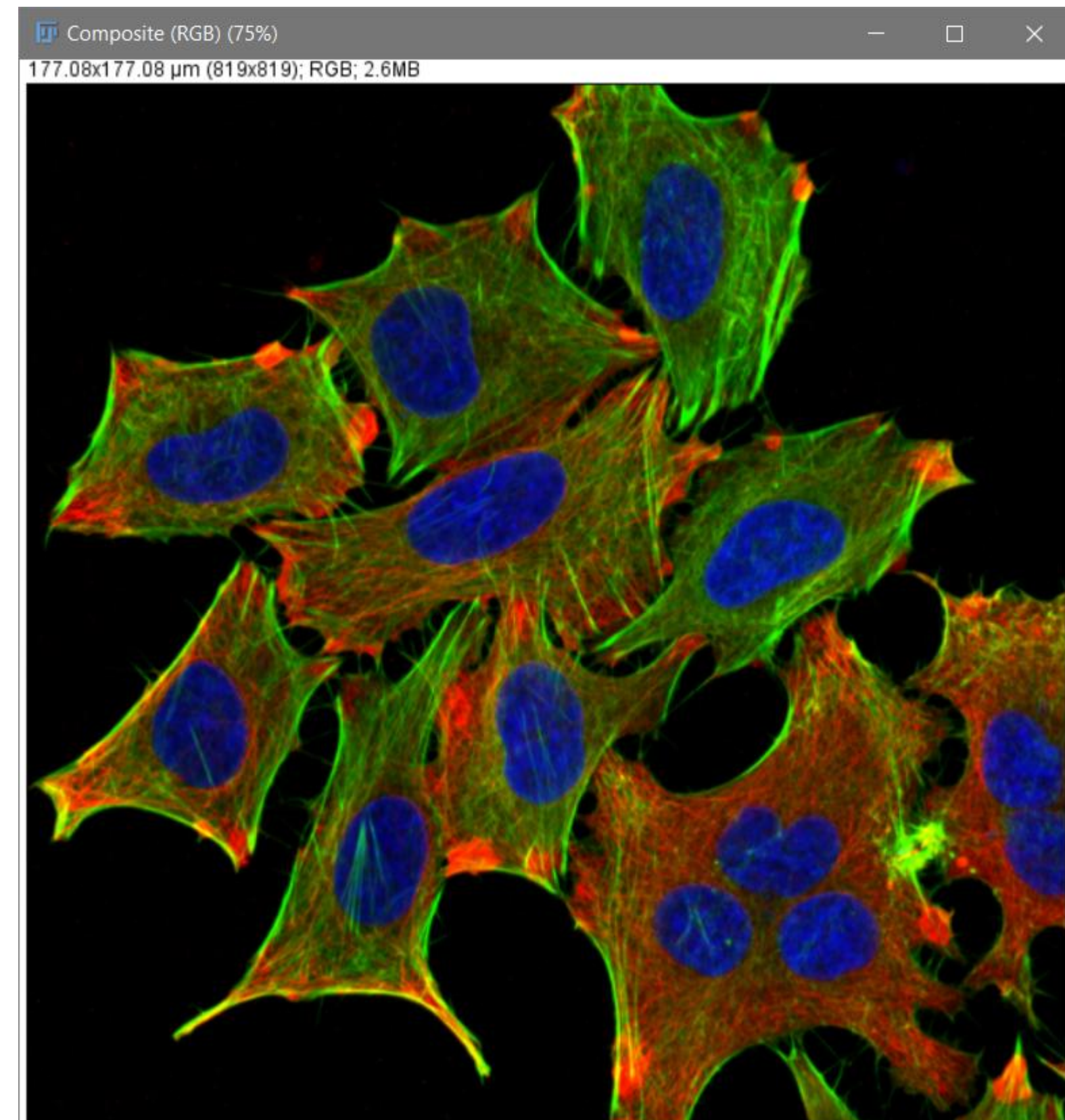


Composite VS RGB

- Composite

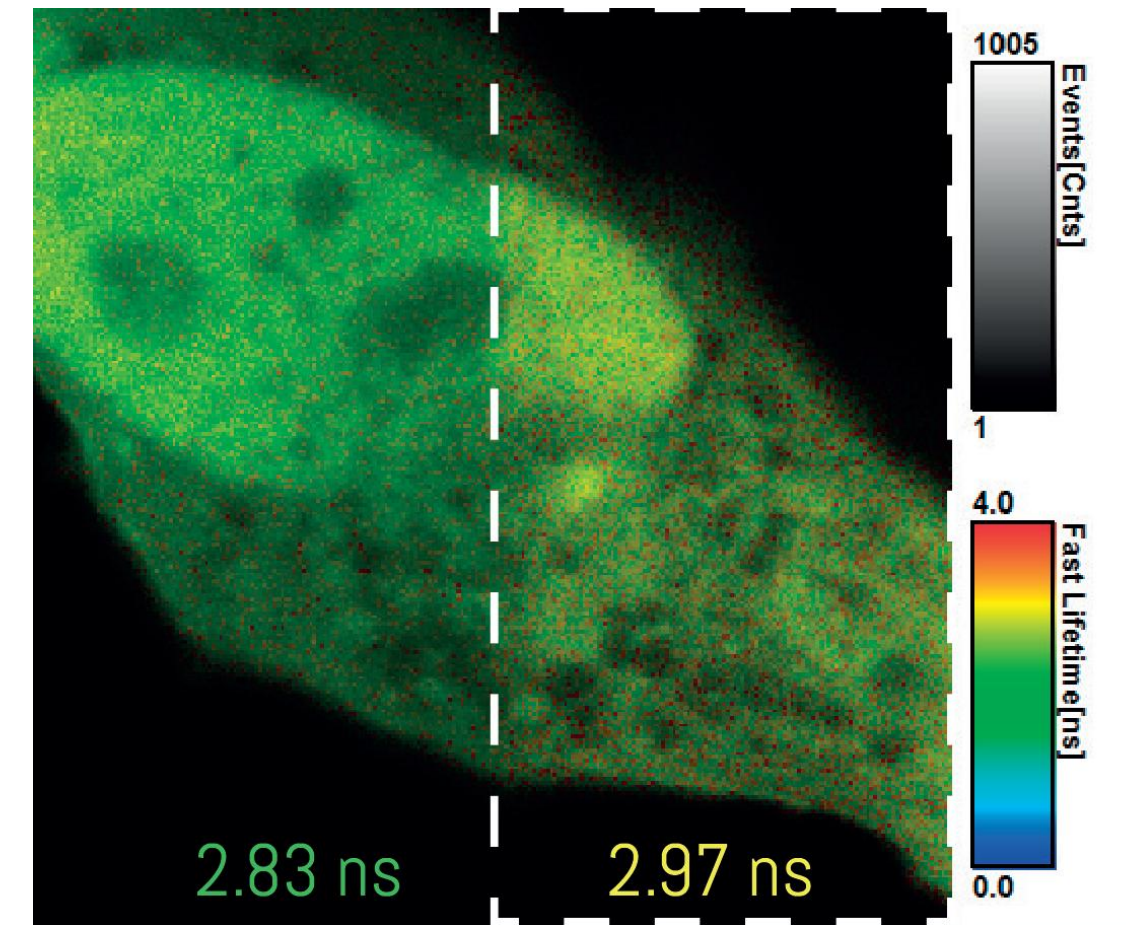


- RGB



Special Images

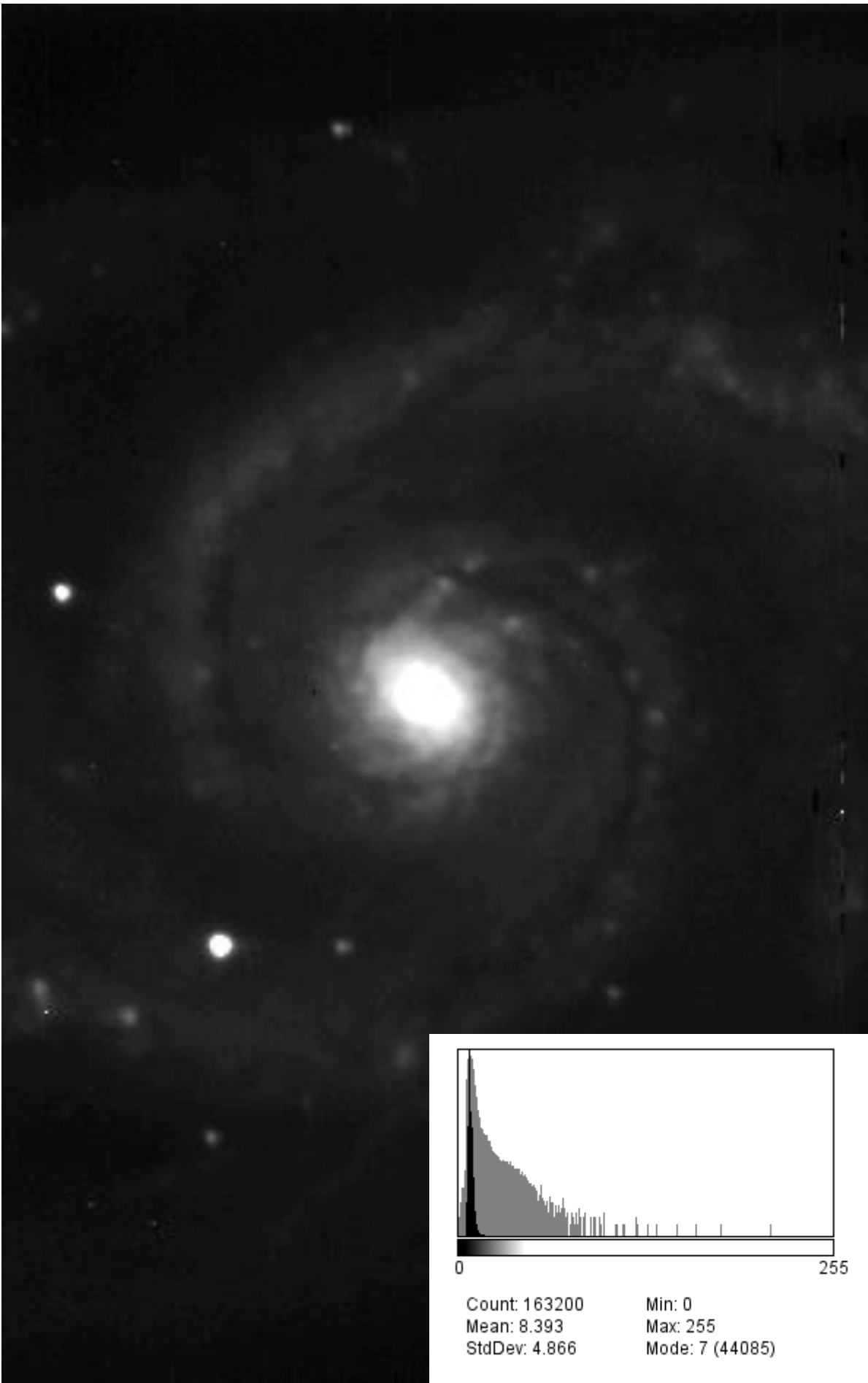
- 32-bit images
- ...



Conclusion

Grey scale images

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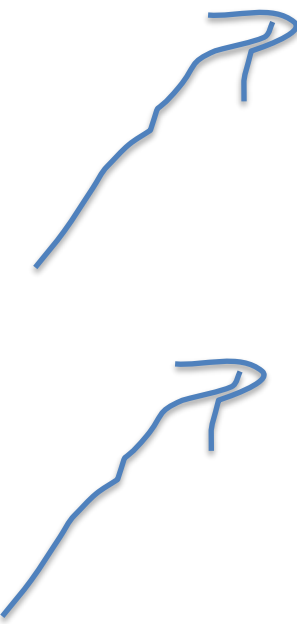


Sample => Explanations (Split shot)

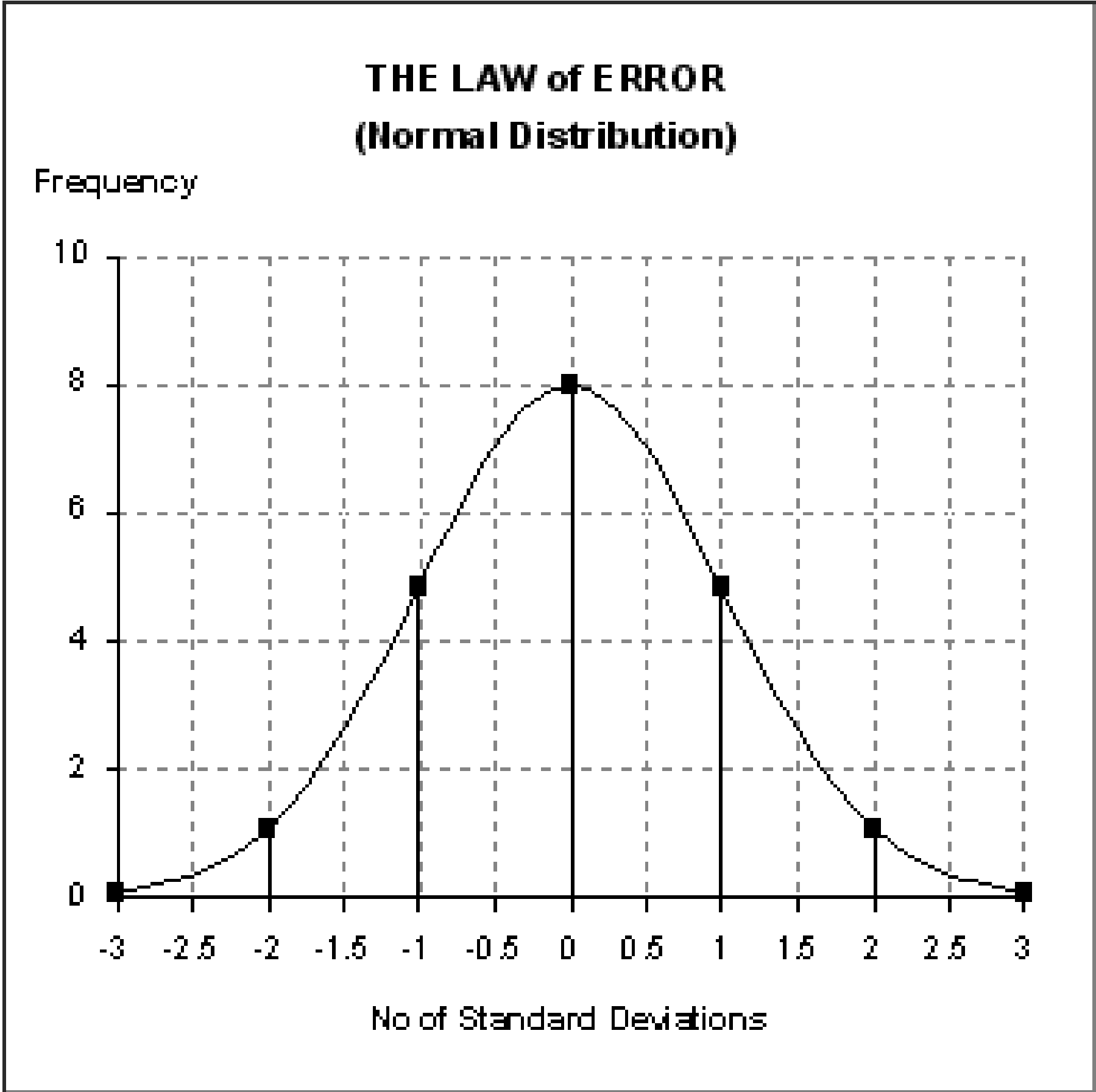


- Referring and explaining
- Split Shot with professor profile
 - Look at the iMac (screen placed on the side of the camera)
 - This will result in a 2/3 shot that gives the impression that the teacher is looking at the content.
- For Bullets and Video
 - Use this shot when commenting static content (an image, graphics, a schema) or a video

Sample => Complementary representations

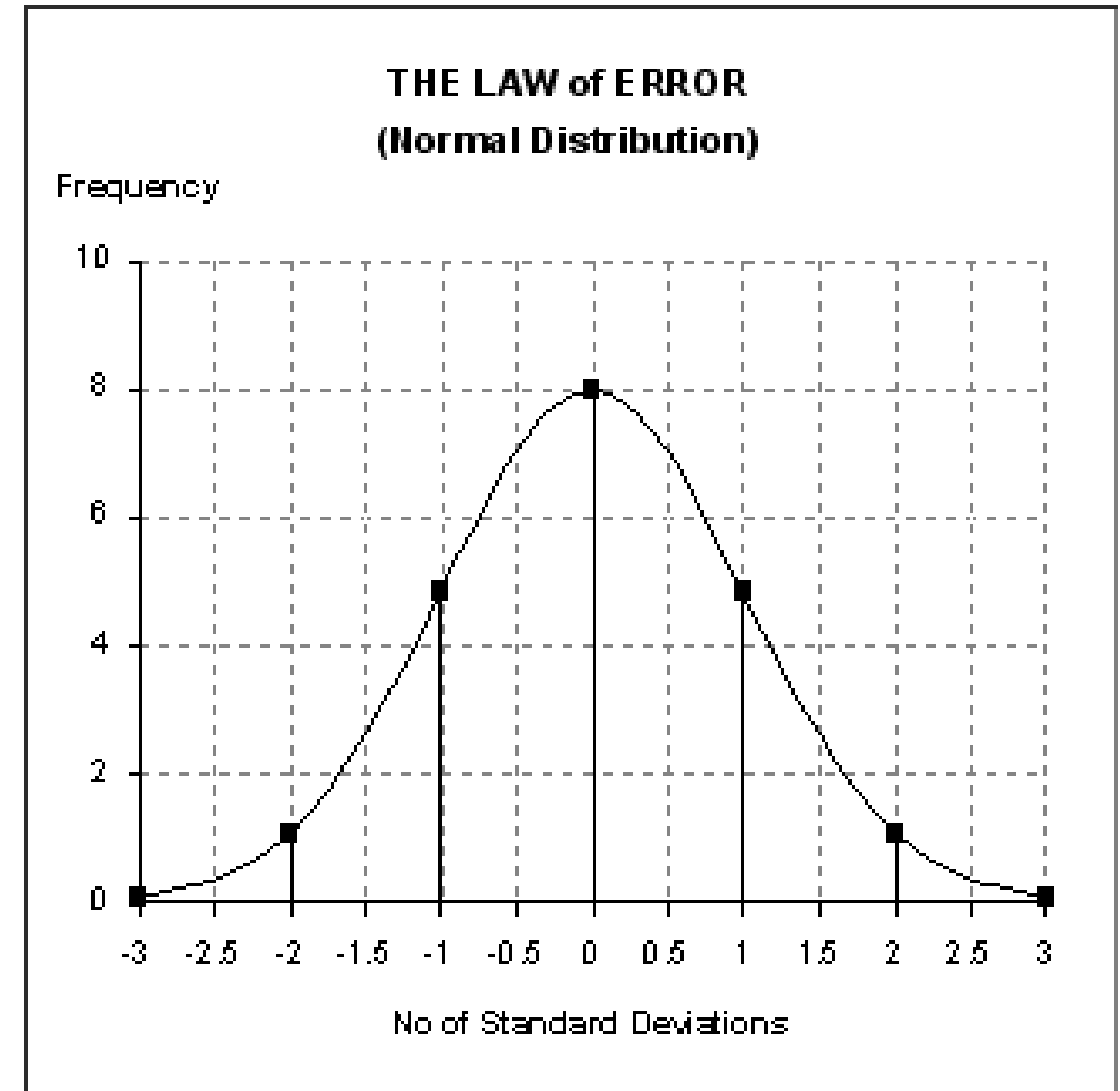


Notation	$\mathcal{N}(\mu, \Sigma)$
Parameters	$\mu \in \mathbb{R}^k$ — location $\Sigma \in \mathbb{R}^{k \times k}$ — covariance (nonnegative-definite matrix)
Support	$x \in \mu + \text{span}(\Sigma) \subseteq \mathbb{R}^k$
PDF	$ 2\pi \Sigma ^{-\frac{1}{2}} e^{-\frac{1}{2}(\mathbf{x}-\mu)'\Sigma^{-1}(\mathbf{x}-\mu)}$, exists only when Σ is positive-definite
CDF	(no analytic expression)
Mean	μ
Mode	μ
Variance	Σ
Entropy	$\frac{1}{2} \ln 2\pi e \Sigma $
MGF	$\exp\left(\mu' t + \frac{1}{2} t' \Sigma t\right)$
CF	$\exp\left(i \mu' t - \frac{1}{2} t' \Sigma t\right)$

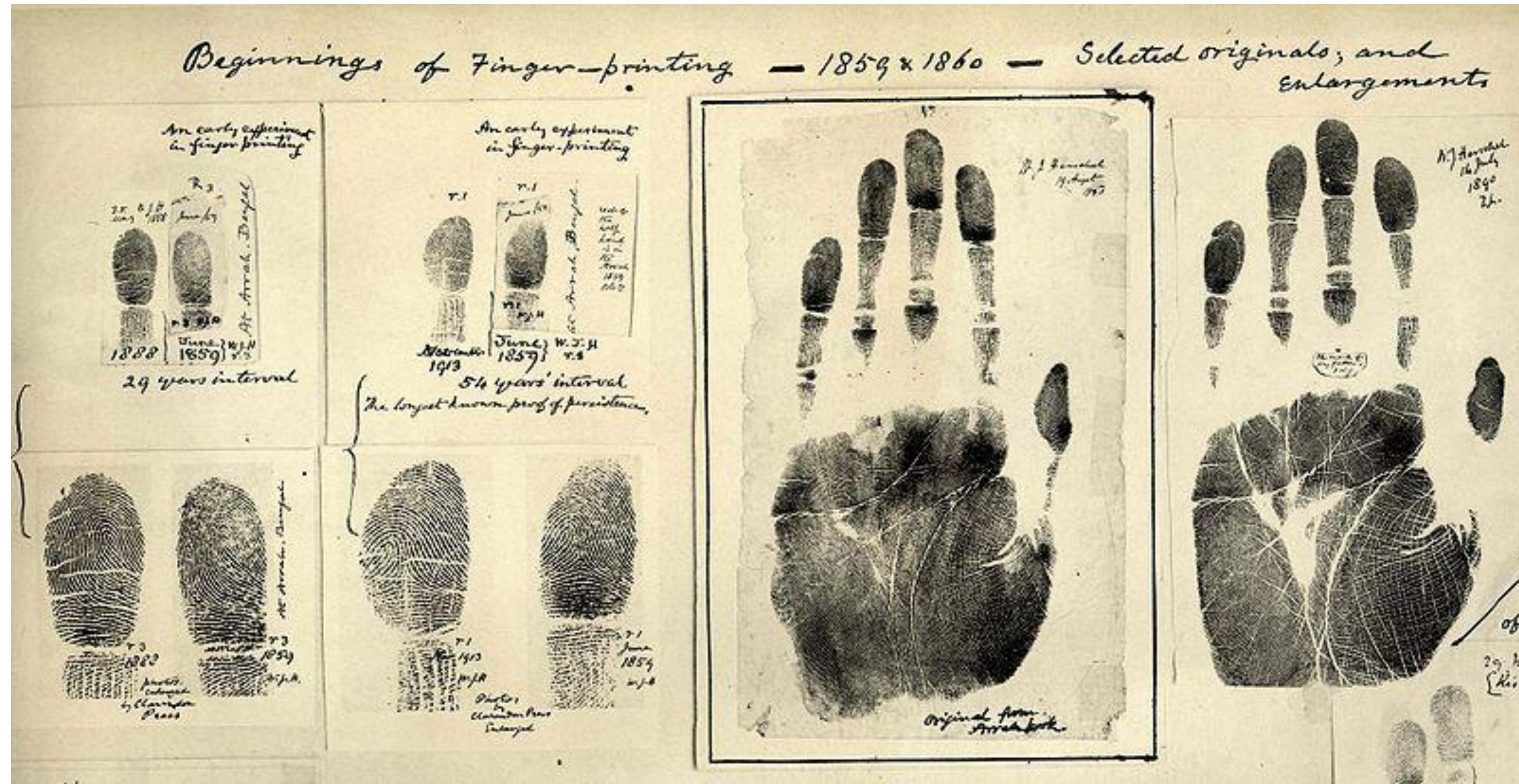


Sample => Handwriting and reference (Split shot)

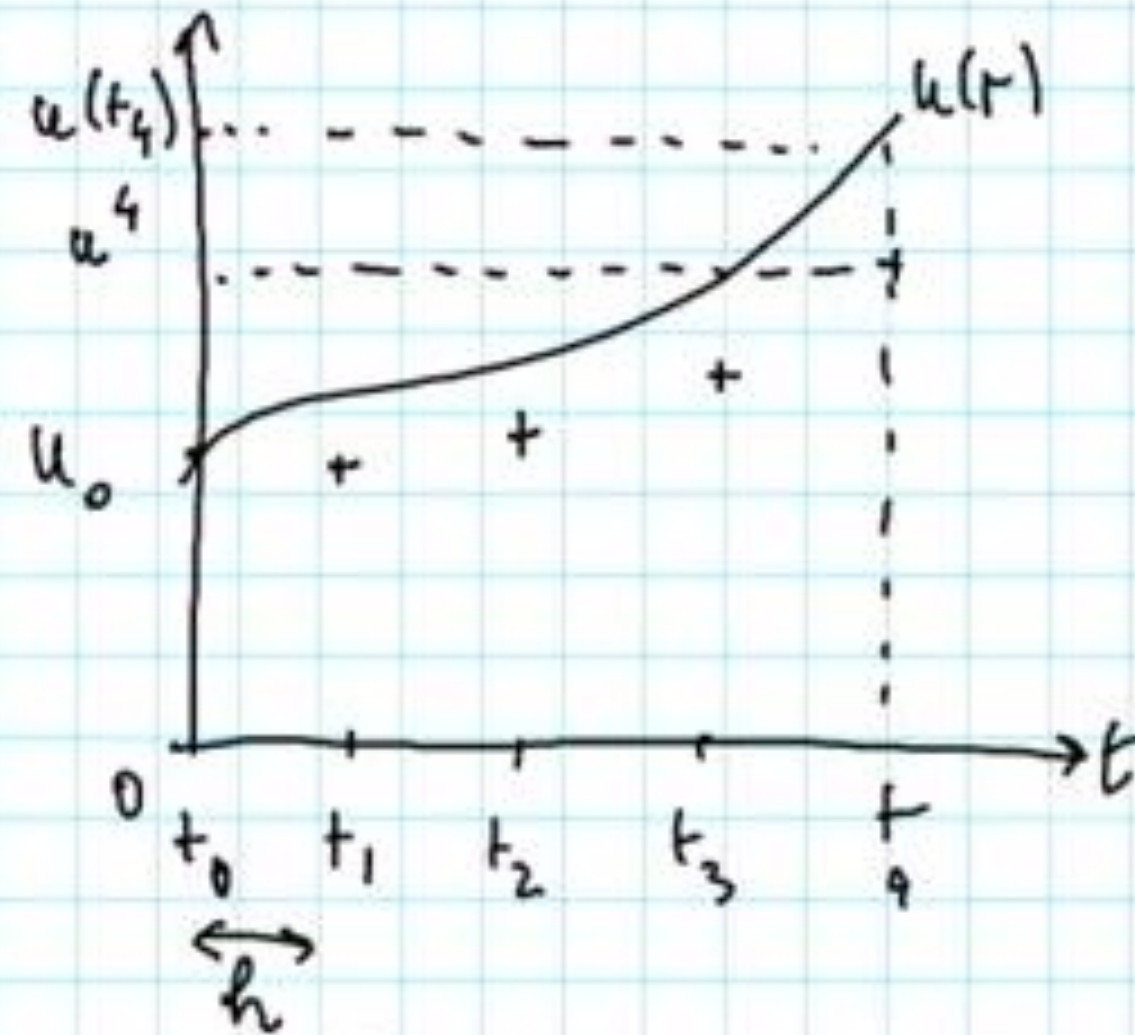
$$\exp\left(\mu't + \frac{1}{2} t' \Sigma t\right)$$



Sample => Wide Content, picture or video



Sample => Handwritten Content (Full shot)



$t_n = nh$ $n=0,1,2,\dots$ Calculer u^n de $u(t_n)$

A partir de $u^0 = u_0$ on va calculer u^1, u^2, \dots, u^{n+1} } méthode de marche en temps.

Schéma d'Euler progressif: $\frac{u^{n+1} - u^n}{h} = f(u^n, t_n)$

origine? on écrit l'éq. diff. temps t_n : $\dot{u}(t_n) = f(u(t_n), t_n)$ on utilise une formule de diff. finies progressive pour approcher $\dot{u}(t_n)$ chap 2

$$\frac{u(t_{n+1}) - u(t_n)}{h} = f(u(t_n), t_n) + O(h) \text{ on remplace } u(t_n) \text{ par } u^n$$

avantage: schéma explicite: $u^{n+1} = u^n + h f(u^n, t_n)$ facile à programmer

inconven

- Try to **avoid this**
- This is a layout that you would use if you have long text in bullets
 - But this might be **difficult to read**
 - And looses a lot of white space
- The best use of this template is to use it to present images or videos
 - The layout allows to have a title, logo, page number around the content.
 - Another advantage compared to the Blank Page Layout is that the content placed in a box:
 - Will be replaced and sized when you change the layout for the slide
 - Will survive the transition to another template in the future.

Graphical elements

Texte Arial Narrow Bold

Texte Arial Narrow

Texte Arial Narrow Bold couleur



Texte Arial Narrow Bold

