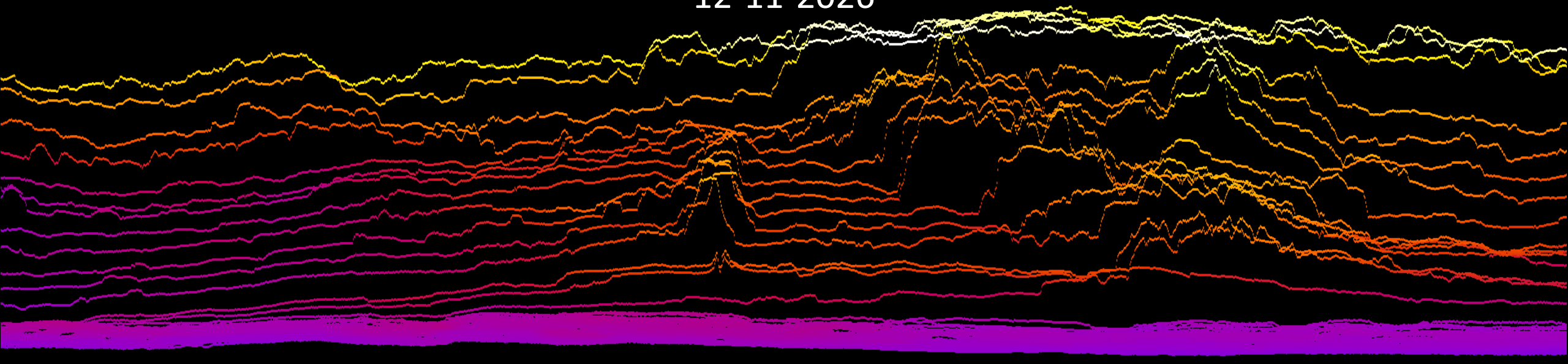
Erasmus Optical Imaging Centre

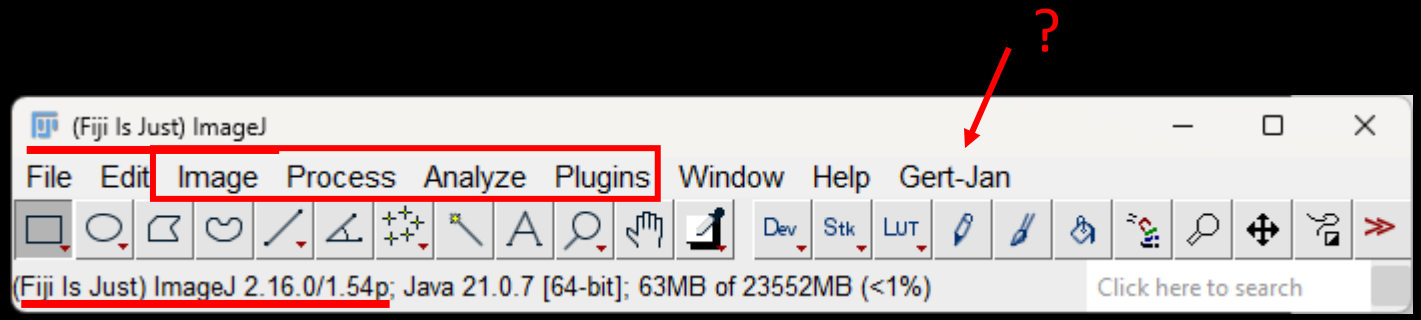
Introduction to ImageJ

Johan Slotman

12-11-2026

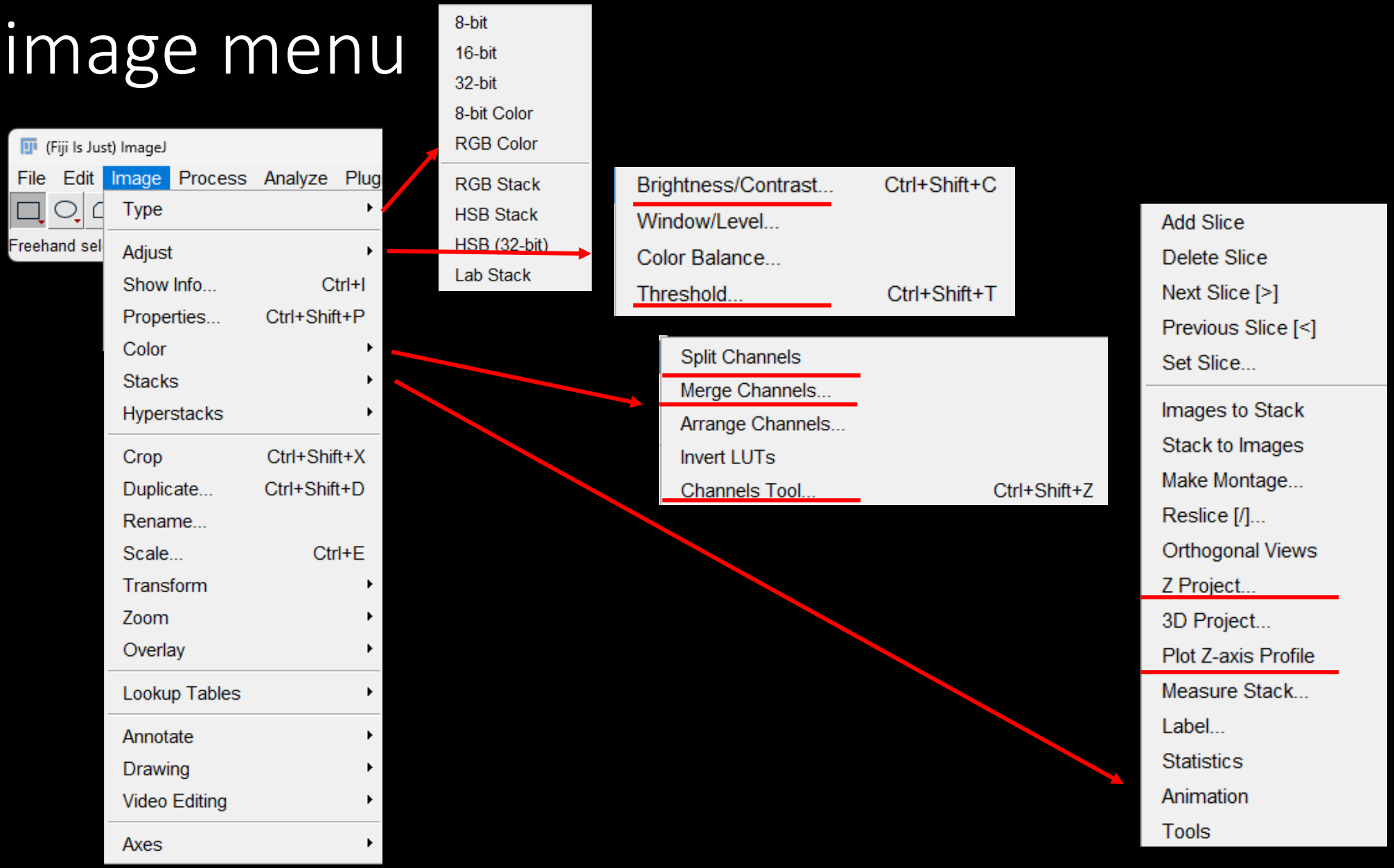


Fiji : Fiji is just ImageJ

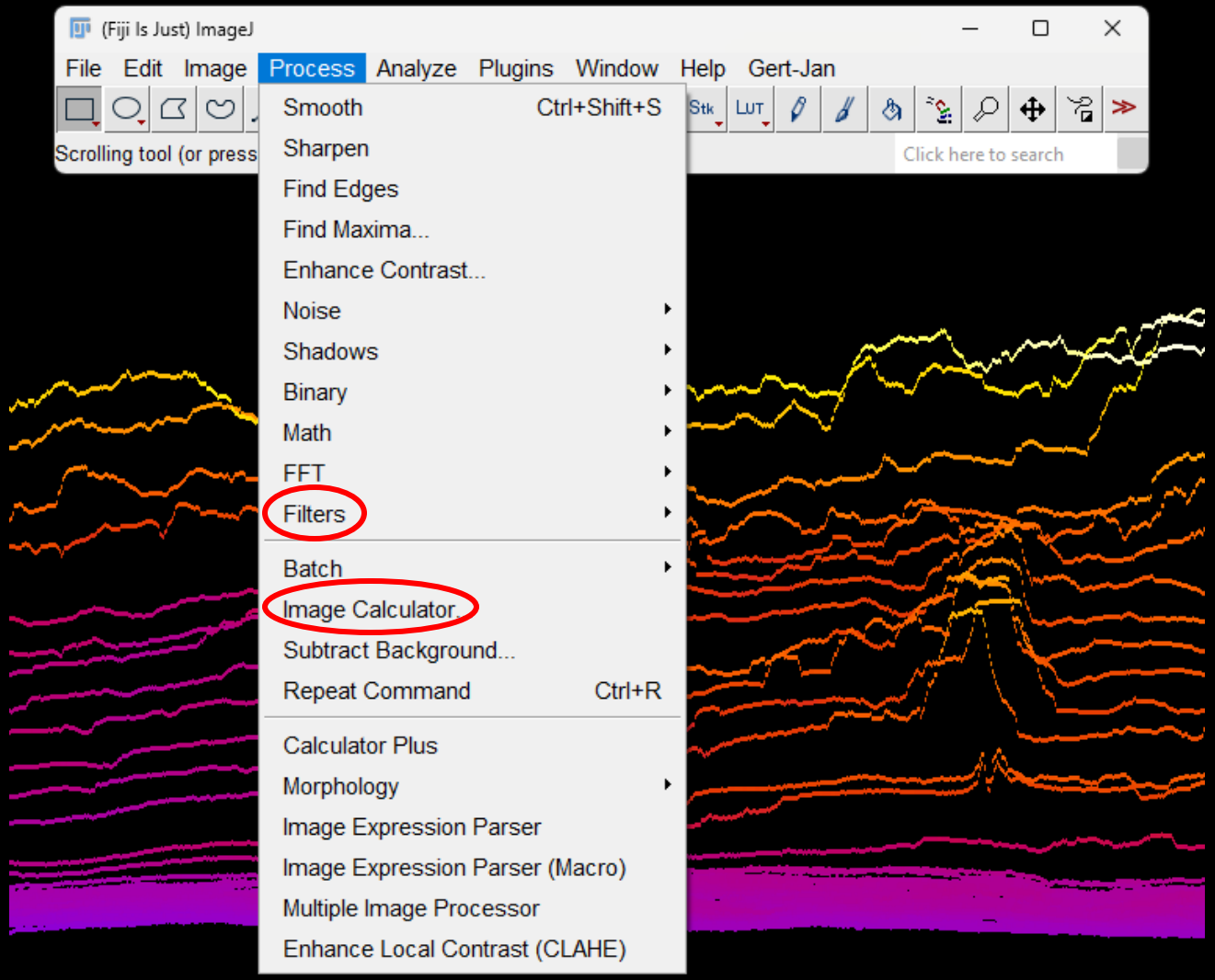


Download at : https://fiji.sc

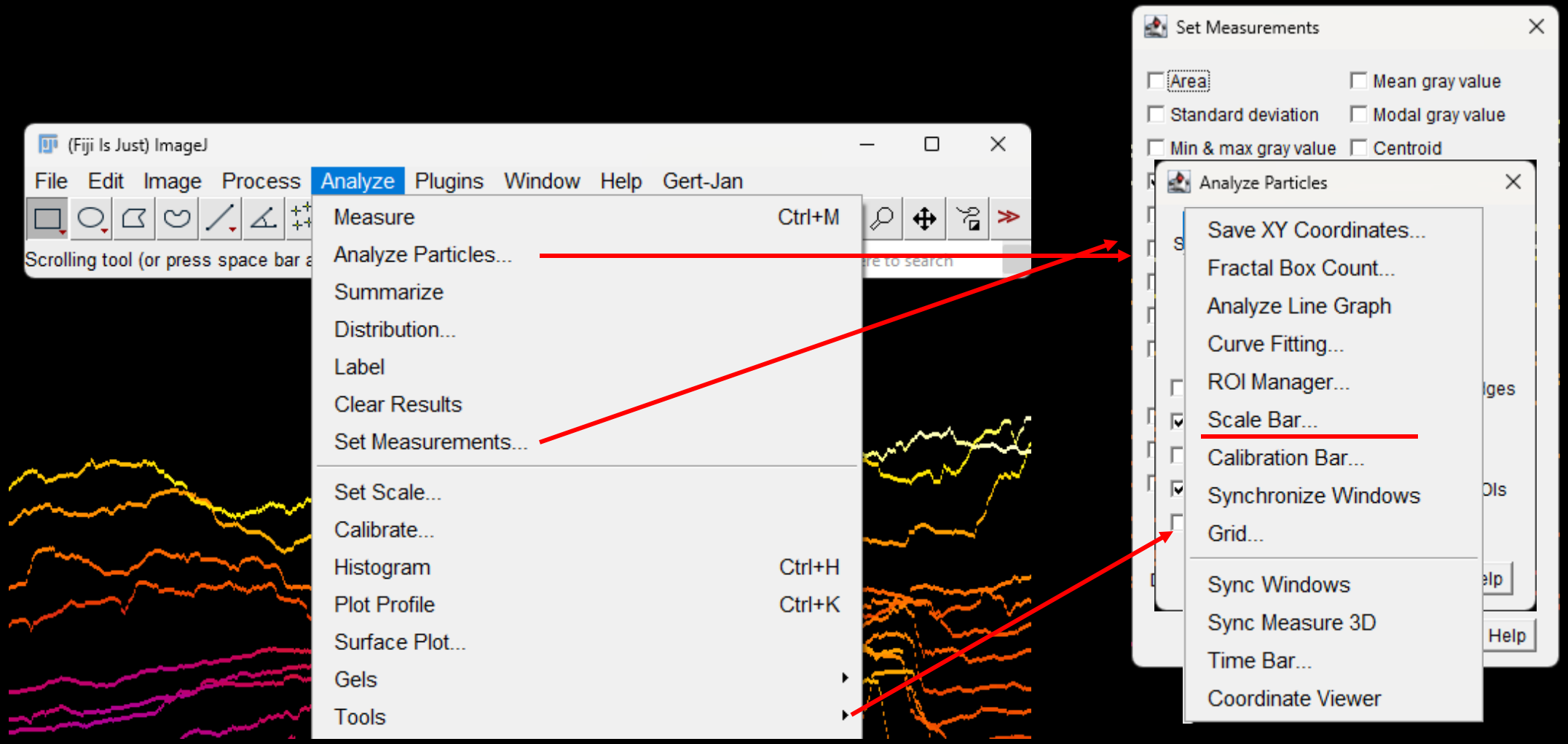
The image menu



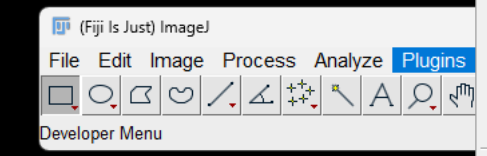
The process menu : Change data

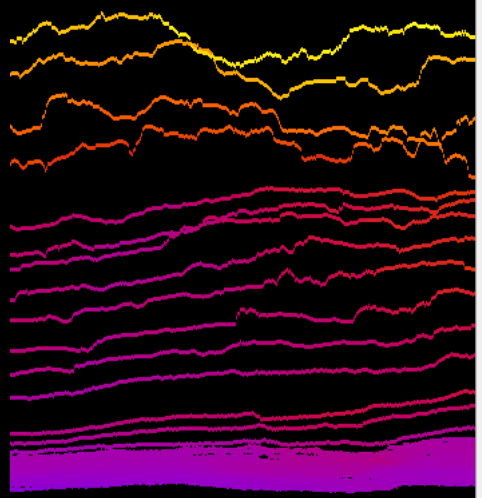


The Analyze menu: measure in images



enu ro's and more

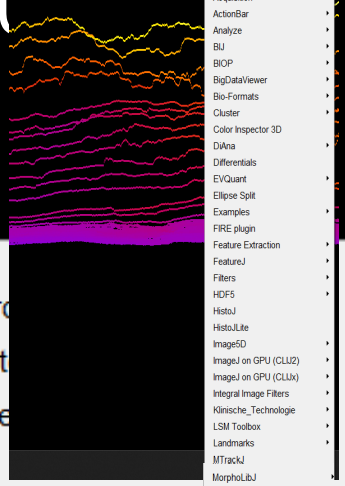




Macros
Shortcuts
Utilities
New
Compile and Run...
Install... Ctrl+Shift+M
Install PlugIn...

3D Viewer
3DSuite
A_JAS_Plugin
Acquisition
ActionBar
Analyze
BIJ
BIOP
BigDataViewer
Bio-Formats
Cluster
Color Inspector 3D
DiAna
Differentials
EVQuant
Ellipse Split
Examples
FIRE plugin
Feature Extraction
FeatureJ
Filters
HDF5
HistoJ
HistoJLite
Image5D
ImageJ on GPU (CLIJ2)
ImageJ on GPU (CLIJx)
Integral Image Filters
Klinische_Technologie
LSM Toolbox
Landmarks
MTrackJ





Macros
Shortcuts
Utilities
New
Compile and Run...
Install... C M
Install PlugIn...

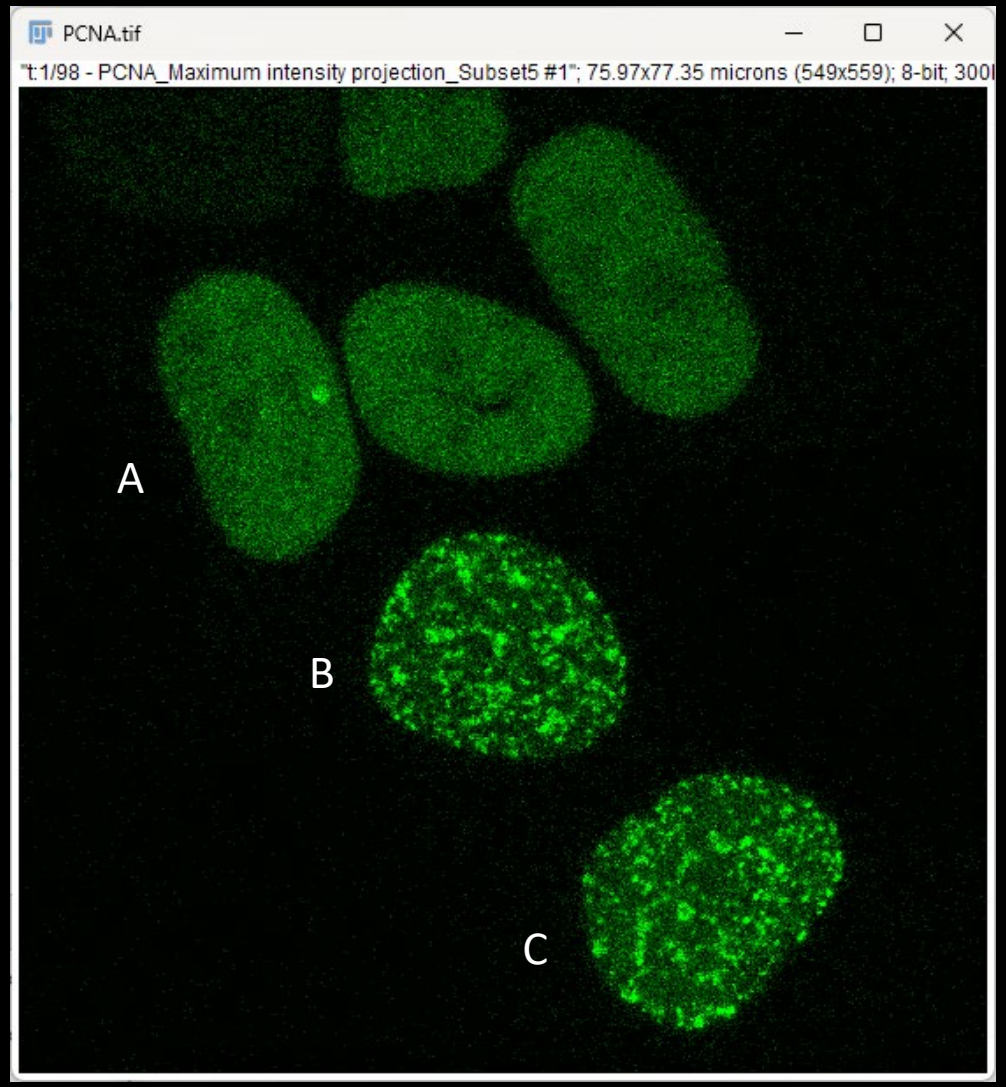
3D Viewer
3DSuite
A_JAS_Plugin
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MTrackJ
MorphoLibJ
MosaicJ
Multiview Reconstruction
NTA
Nearest_Neighbours
NeuronJ
Non-local Means Denoising
OIC_PlugIns
Optic Flow
OrientationJ
PointPicker
PolarView
Process
RandomJ
Registration
Ridge Detection
SCIF_Confocal_Simulator
SIMcheck
SOS
SPIM Registration
STORM_Tools
Scripting
Segmentation
Shape Filter
Shape Smoothing
SheppLogan
Skeleton
Snakuscule
StackReg
Stacks
StarDist
Stitching
Time Lapse
Tracking
Transform
TransformJ
Tracking
Transform
TransformJ
TurboReg
Utilities
Volume Viewer

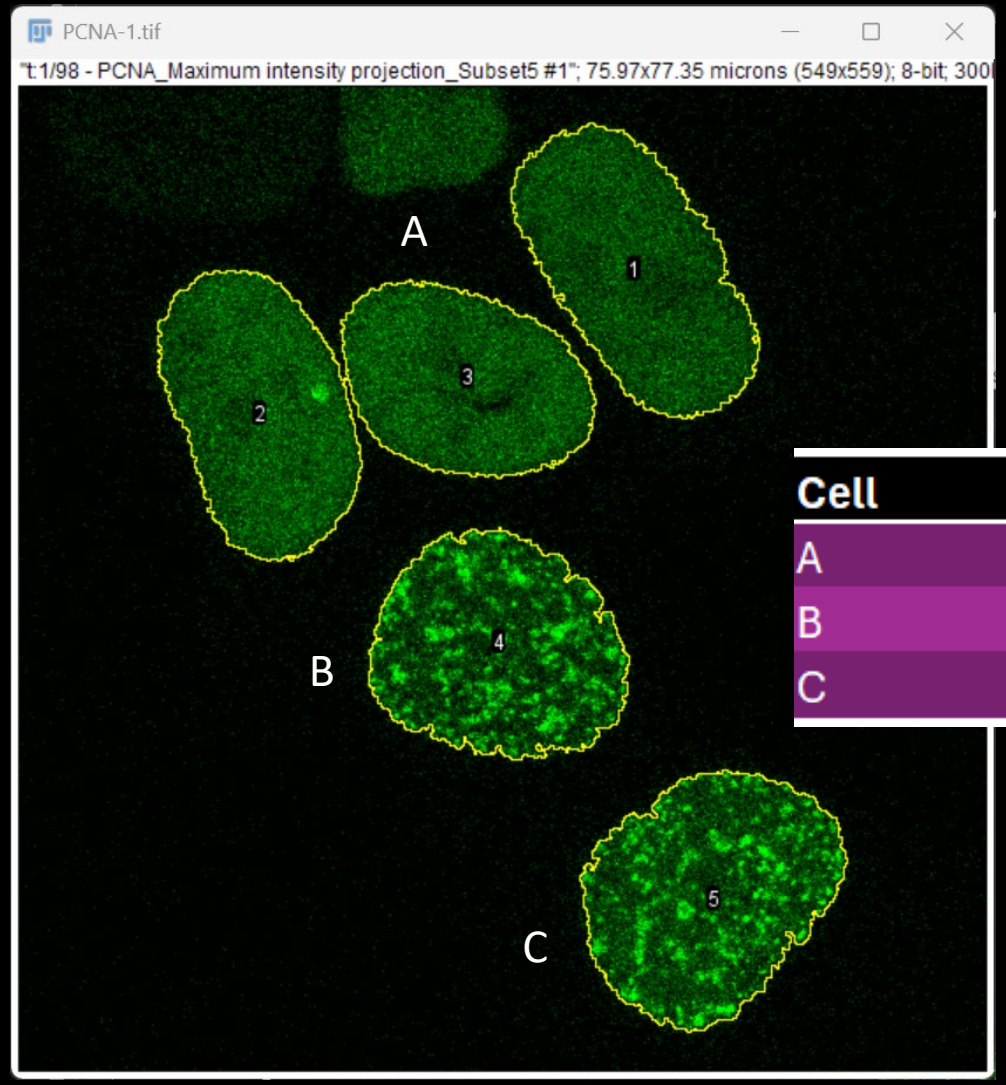
Install...
Run...
Edit...
Startup Macros...
Interactive Interpreter... Ctrl+J
Record... Ctrl+U

Measuring Intensity



- Point at a cell and write down intensities
- Draw a line around the cell and measure
- Segment the cells and automatically measure

Measuring intensities



- Gaussian blur of 1
- Threshold of 40

Cell	Guessed	Manual Measured	Automatic Measured
A	92	70	78
B	150	66	85
C	130	75	88

What happens if these Analysis are repeated By me or someone else?

Standardize the measurements

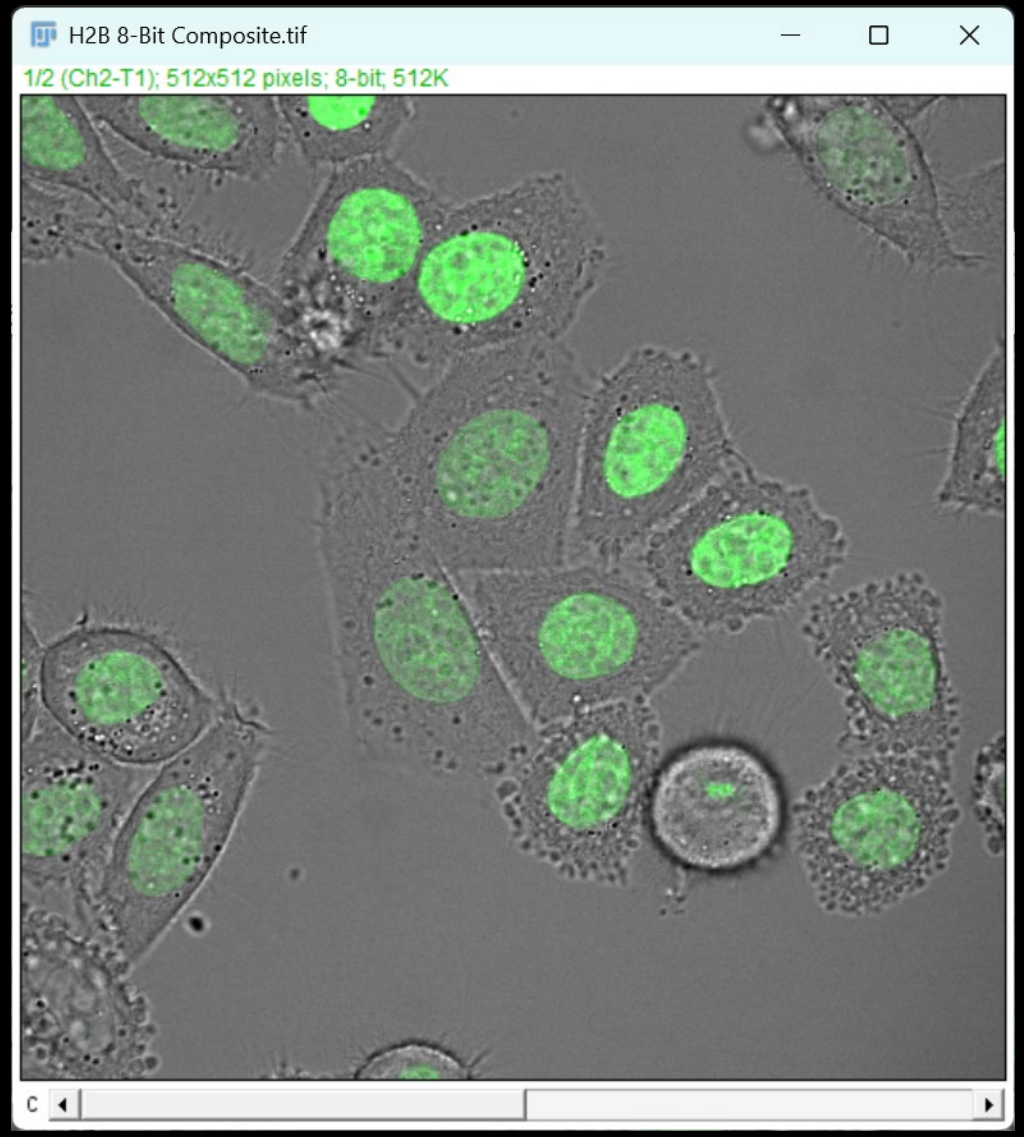
Standard protocol for cell culture

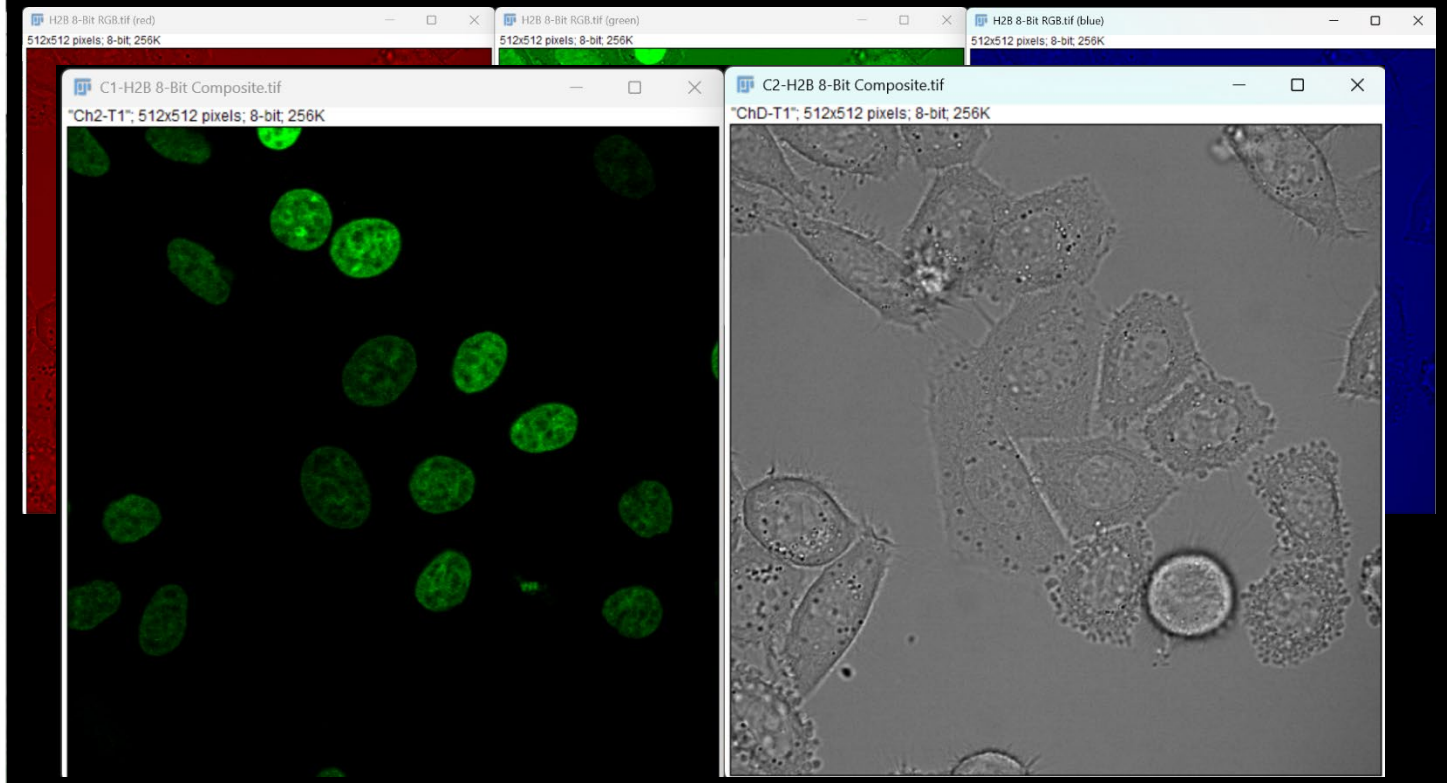
Standard protocol for microscope setup

Standard protocol for image analysis

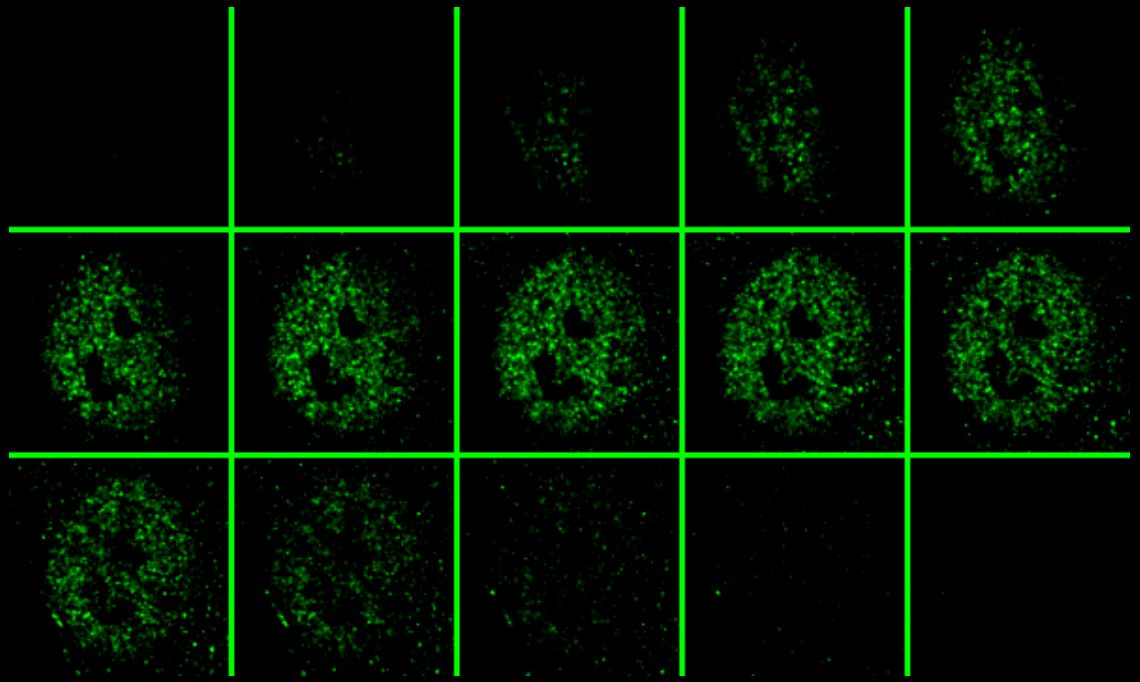
Color images

Type conversion
RGB
RGB stack
Channels tool

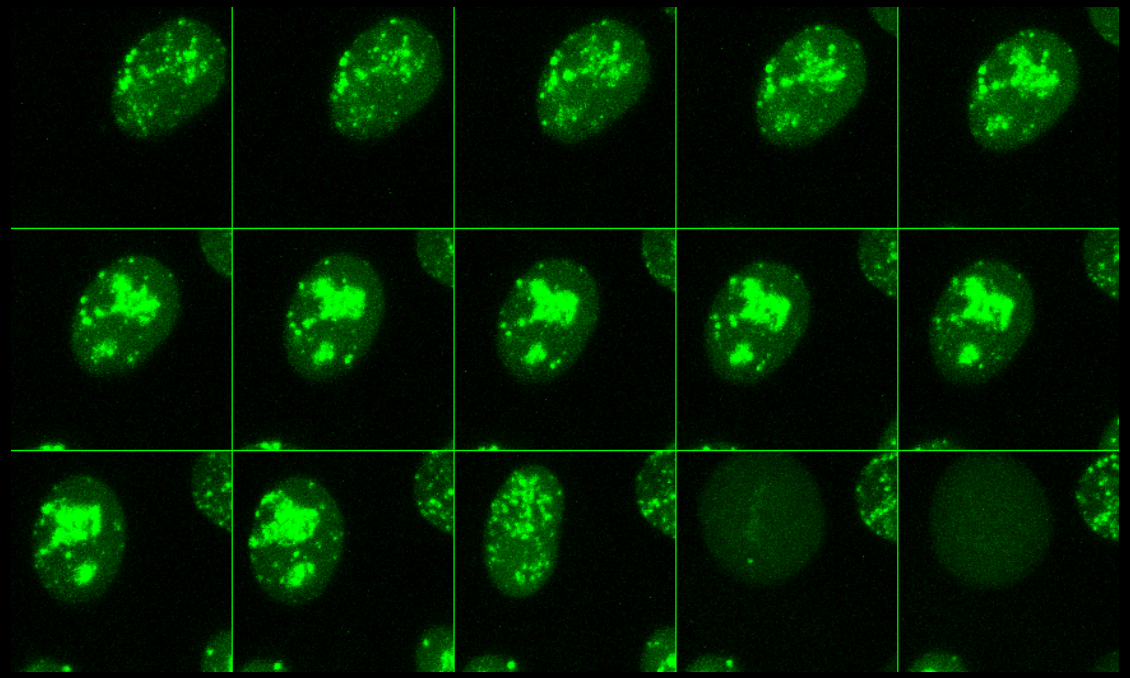




3D data: z-slices, Time Lapse

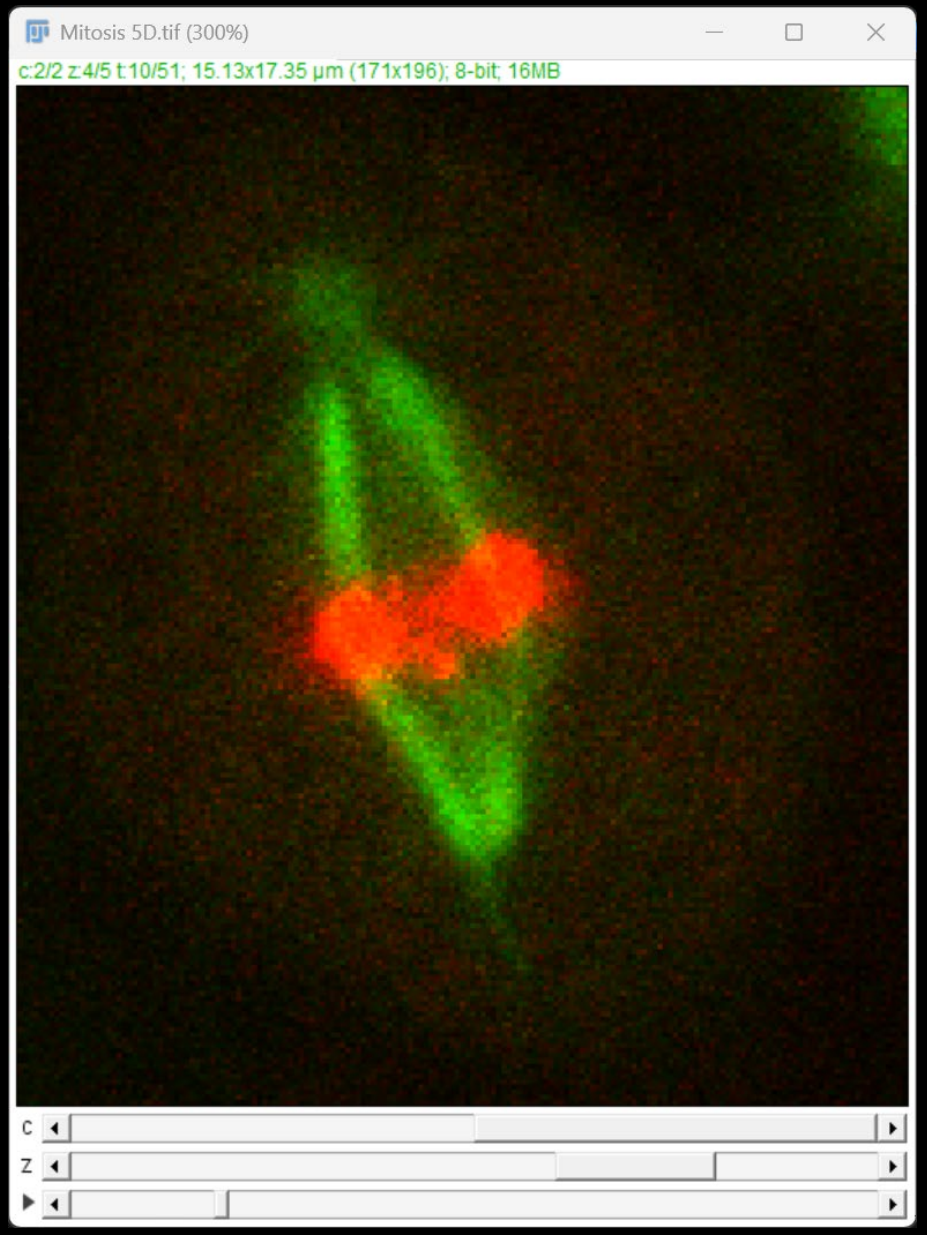


Z-stack

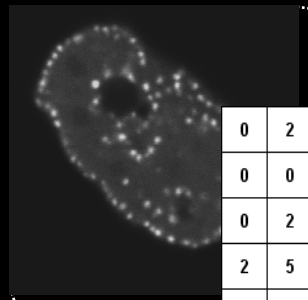


Timelapse

Hyperstack 5D image



Filtering calulating on images



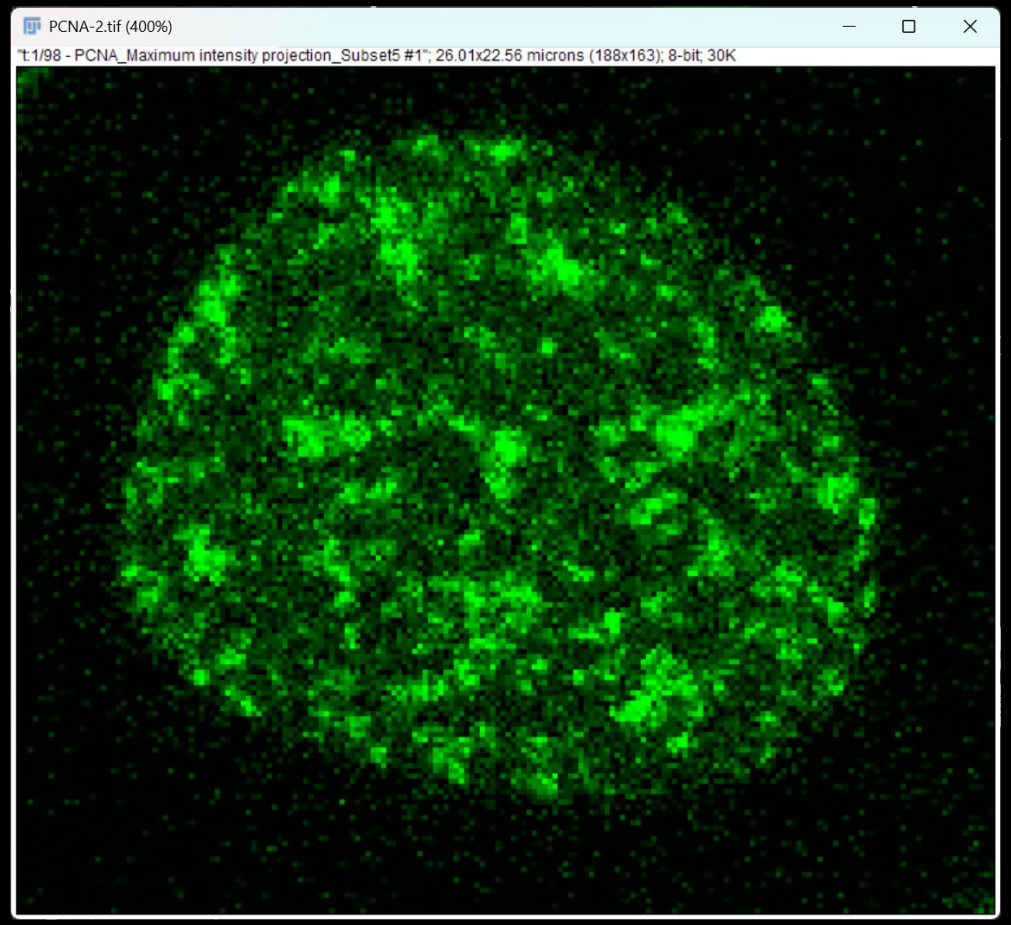
0	2	2	2	5	8	11	8	2	2	0	0	0	0	0	0	0	0
0	0	2	11	76	136	164	85	11	5	2	2	0	0	0	0	0	0
0	2	25	172	181	133	133	164	90	14	5	2	2	0	0	0	0	0
2	5	175	130	104	127	141	164	206	65	31	11	2	2	0	0	0	0
2	28	212	124	110	204	164	232	133	155	218	87	14	2	2	0	0	0
2	73	178	133	121	195	34	31	198	175	204	167	104	14	5	0	0	0
2	45	226	141	113	184	53	59	70	192	133	138	167	99	11	2	0	0
0	2	70	184	102	116	155	161	175	155	141	184	255	138	34	5	2	0
0	0	5	141	121	133	209	215	133	206	124	121	130	153	104	8	2	0
0	0	2	73	164	124	121	198	252	147	121	127	119	119	150	19	2	0
0	0	0	5	93	150	102	119	130	127	104	121	124	133	153	25	2	0
0	0	0	0	5	62	153	155	119	136	198	155	127	124	187	19	2	2
0	0	0	0	0	5	138	161	178	155	127	124	141	158	232	5	2	2
0	0	0	0	0	0	11	113	164	172	184	102	121	164	79	2	2	2
0	0	0	0	0	0	2	5	36	206	187	147	164	153	5	2	2	0
0	0	0	0	0	0	0	0	2	5	25	76	31	2	2	2	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
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Filters

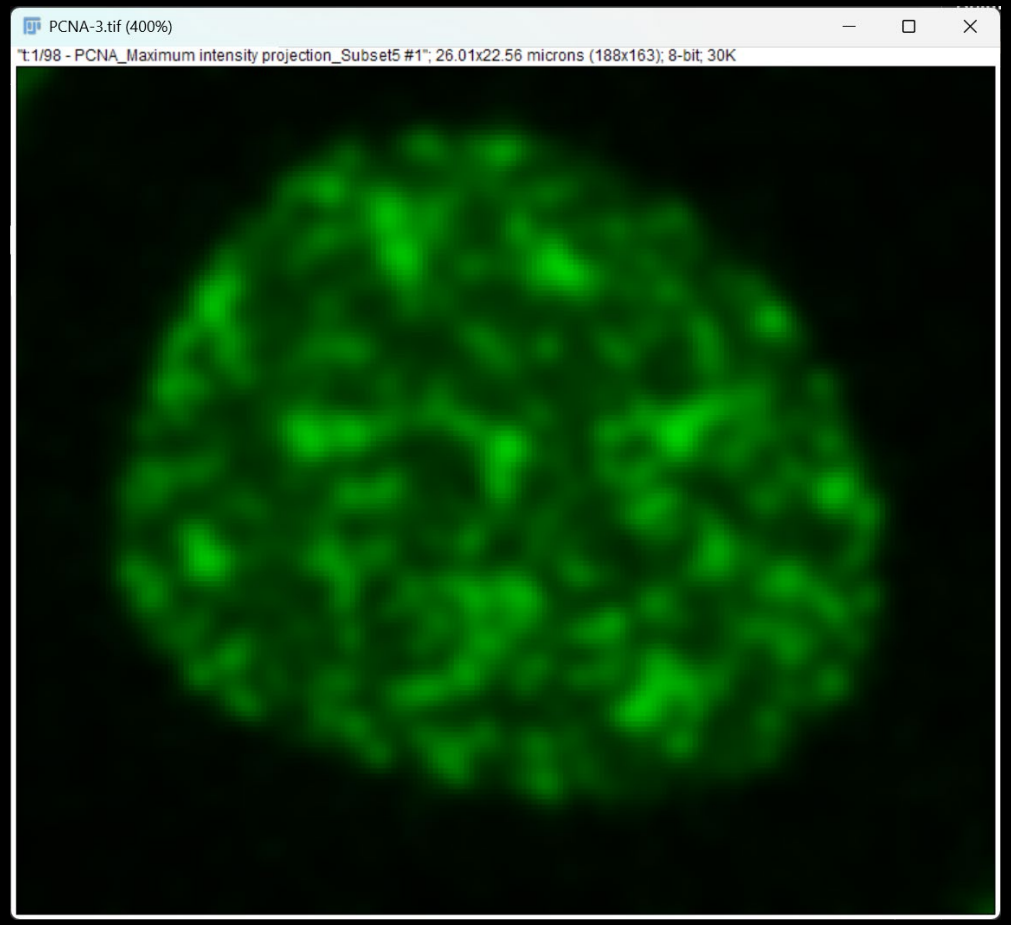
	Image					Filter			Image*filter 1 pixel				
78	85	77	93	78									
85	97	83	69	89		1	2	1	97	166	69		
76	74	**89**	75	78		2	4	2	148	356	150		**84**
73	85	89	93	89		1	2	1	85	178	93		
77	87	75	92	87									
					Sum		16			1342			

	Image					Filter			Image*filter 1 pixel				
78	85	77	93	78									
85	97	83	69	89		1	2	1	97	166	69	85	83	80
76	74	**89**	75	78		2	4	2	148	356	150	83	**84**	82
73	85	89	93	89		1	2	1	85	178	93	81	86	87
77	87	75	92	87									
					Sum		16			1342	84		

Effect of gaussian blur of 2



Before



After

Other resources

