Imaging with spatio-temporal modelling to characterize the dynamics of plant-pathogen lesions
Appendix S3

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S3 Assessment of the discrepancy between model and data

S3.1 Spatial comparison of model prediction against data

For each monitored inoculated stipules the discrepancy between the probability images (top) and the fitted reaction-diffusion model (middle) is assessed by visualizing the raw residuals $[u_{reg}(\mathbf{x}, t_i) - u(\mathbf{x}, t_i, \hat{\theta})]$ (bottom) at day 4, 5, 6 and 7 after inoculation (from left to right).

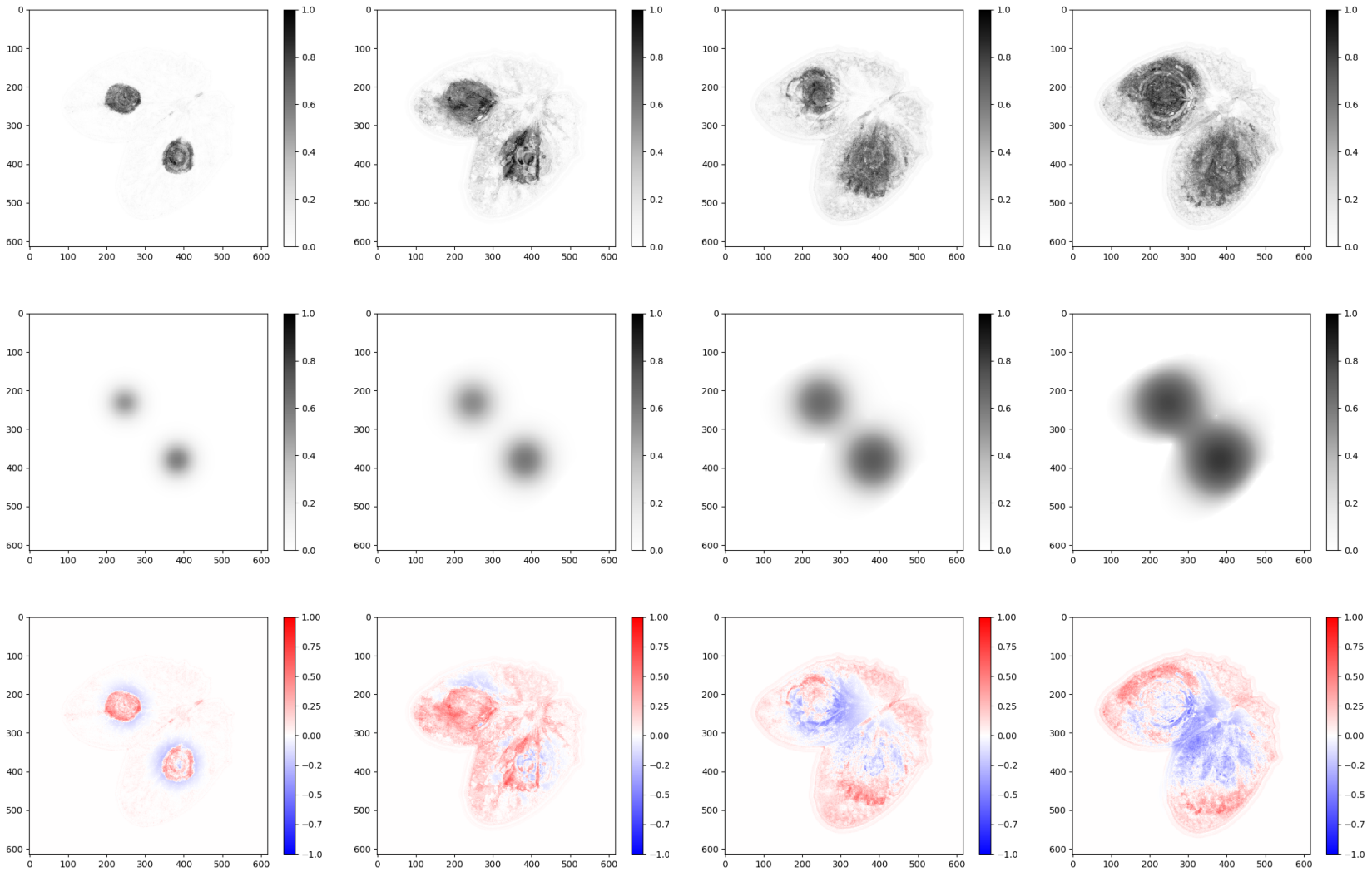

Figure A: Solara N°1

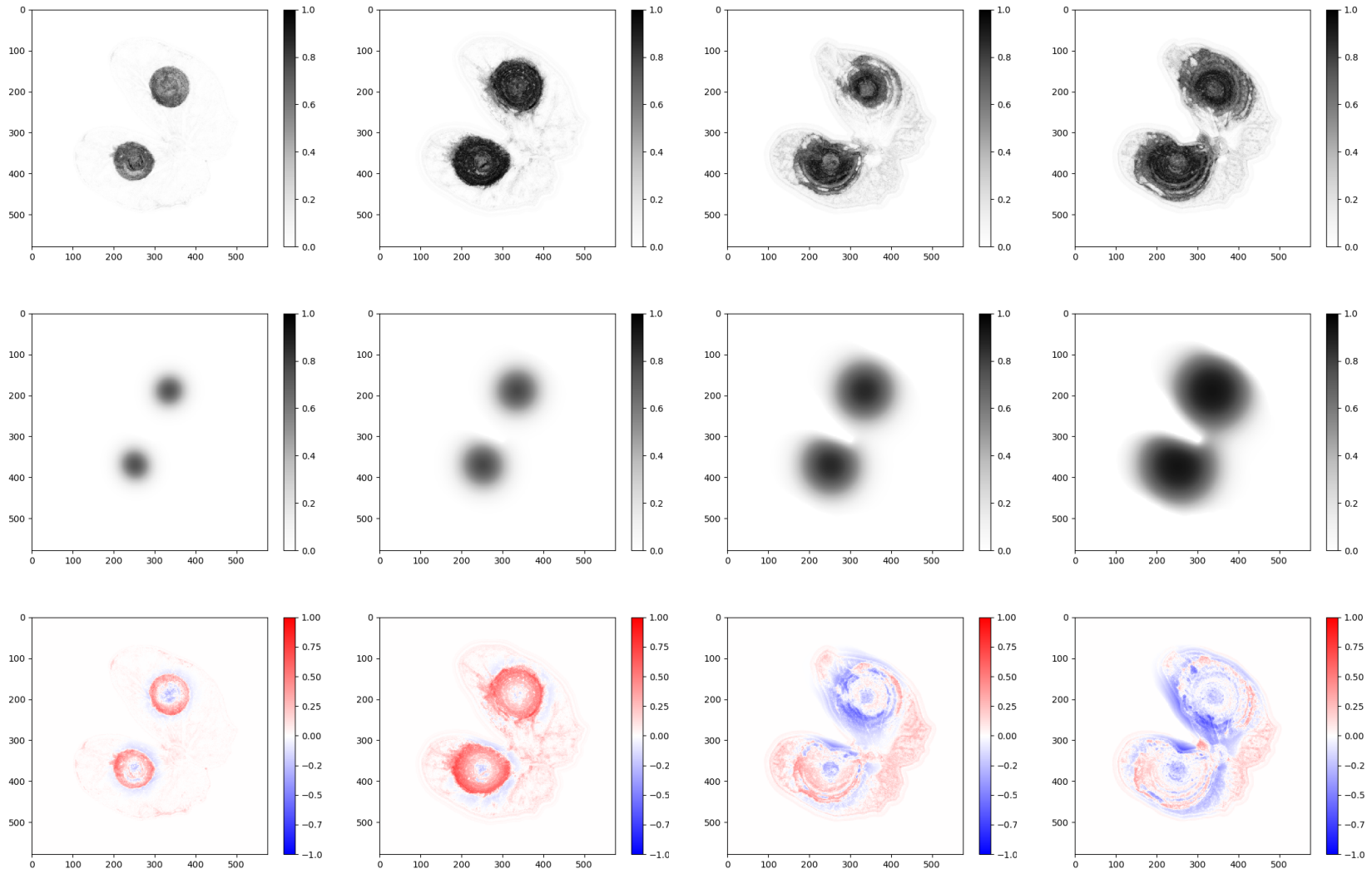

Figure B: Solara N°2

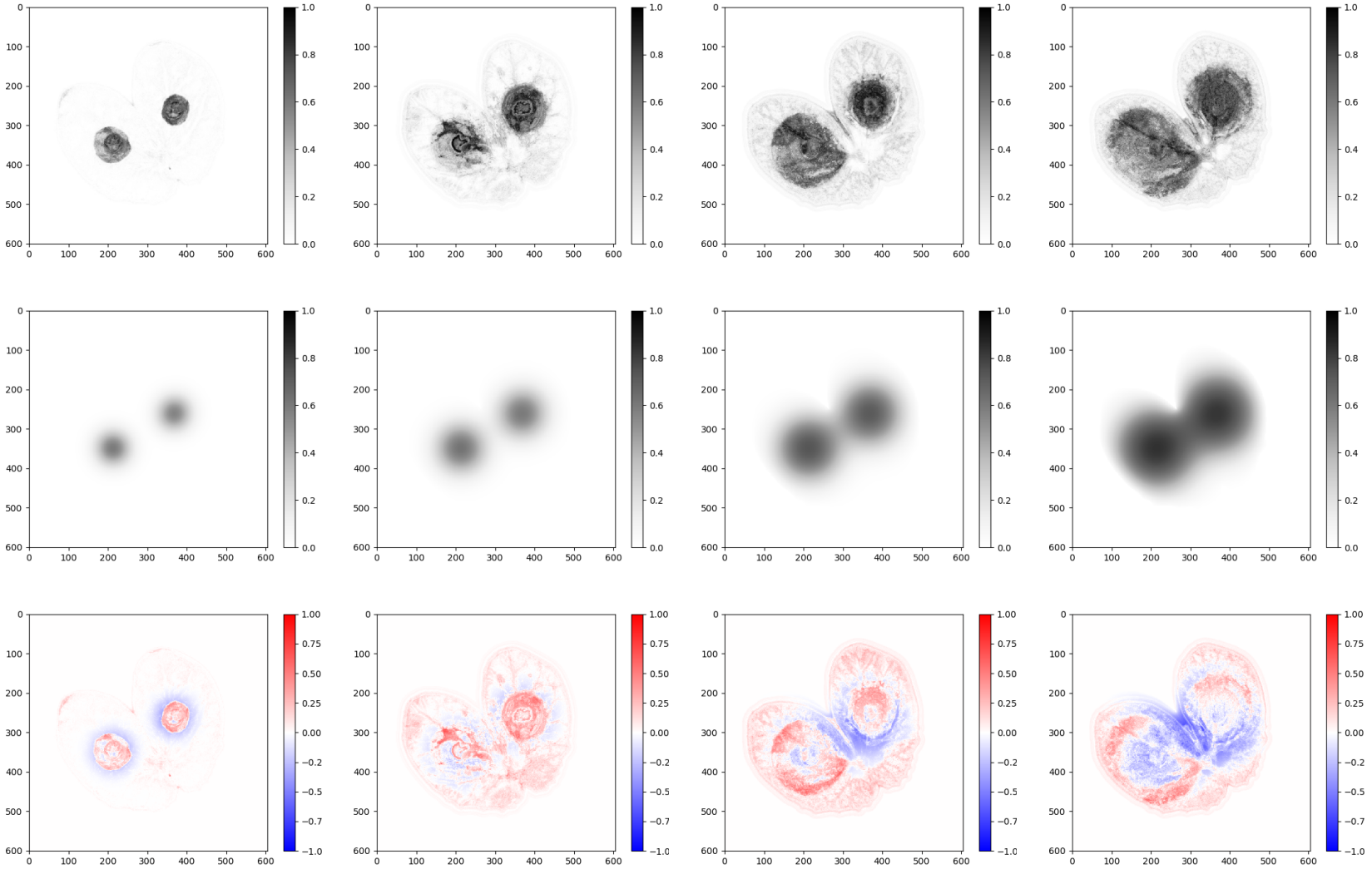

Figure C: Solara N°3

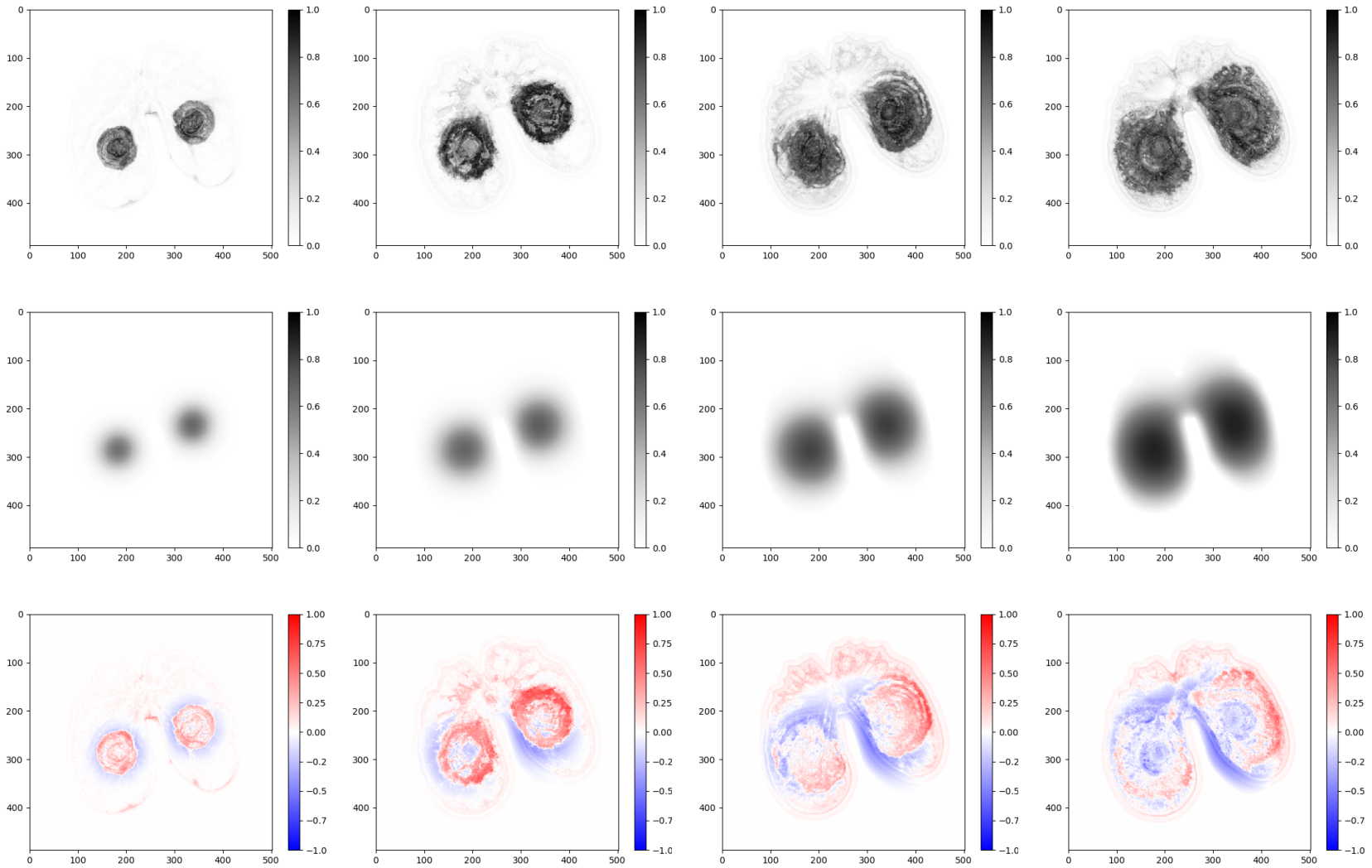

Figure D: Solara N°4

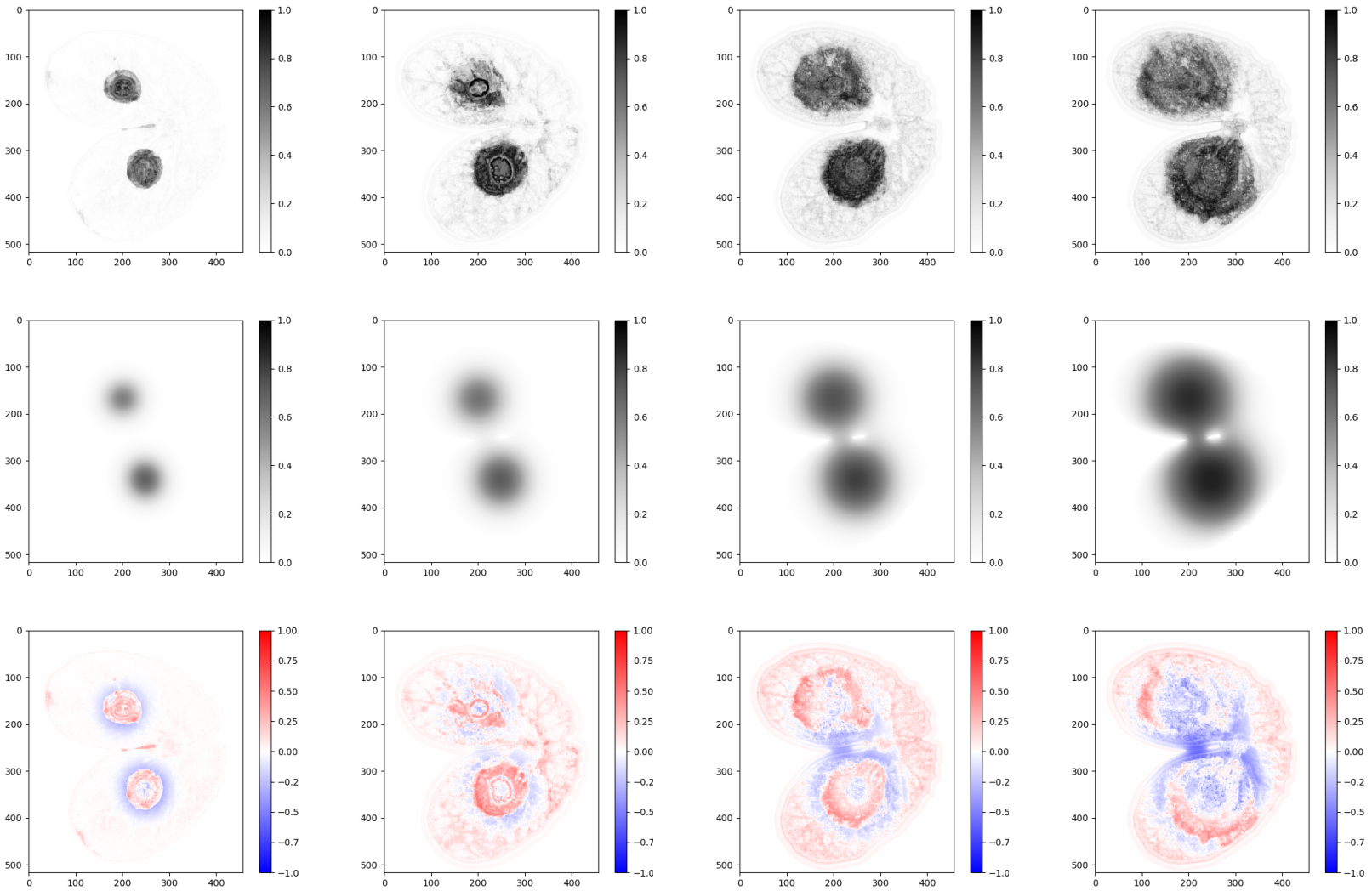

Figure E: Solara N°5

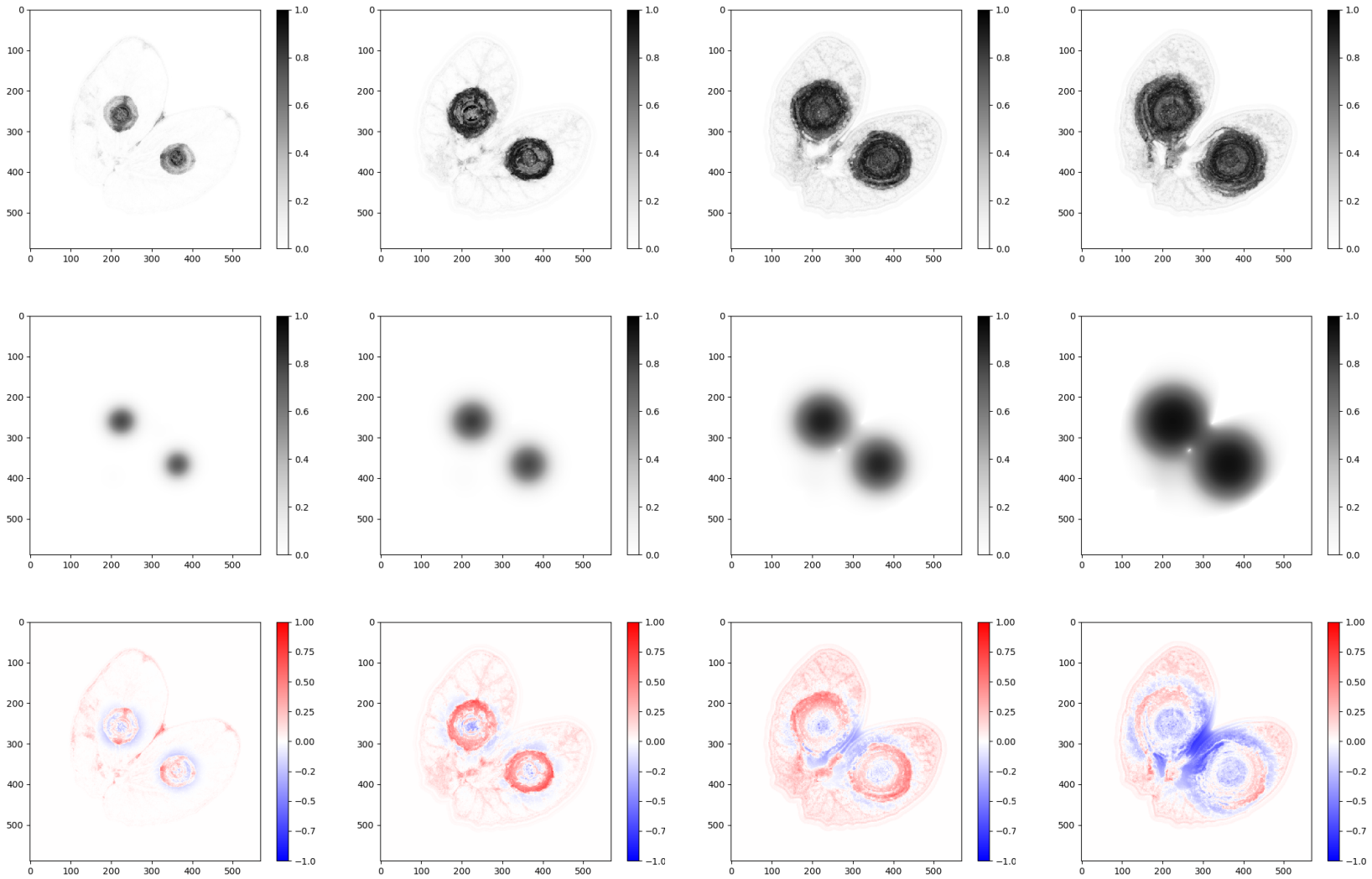

Figure F: Solara N°6

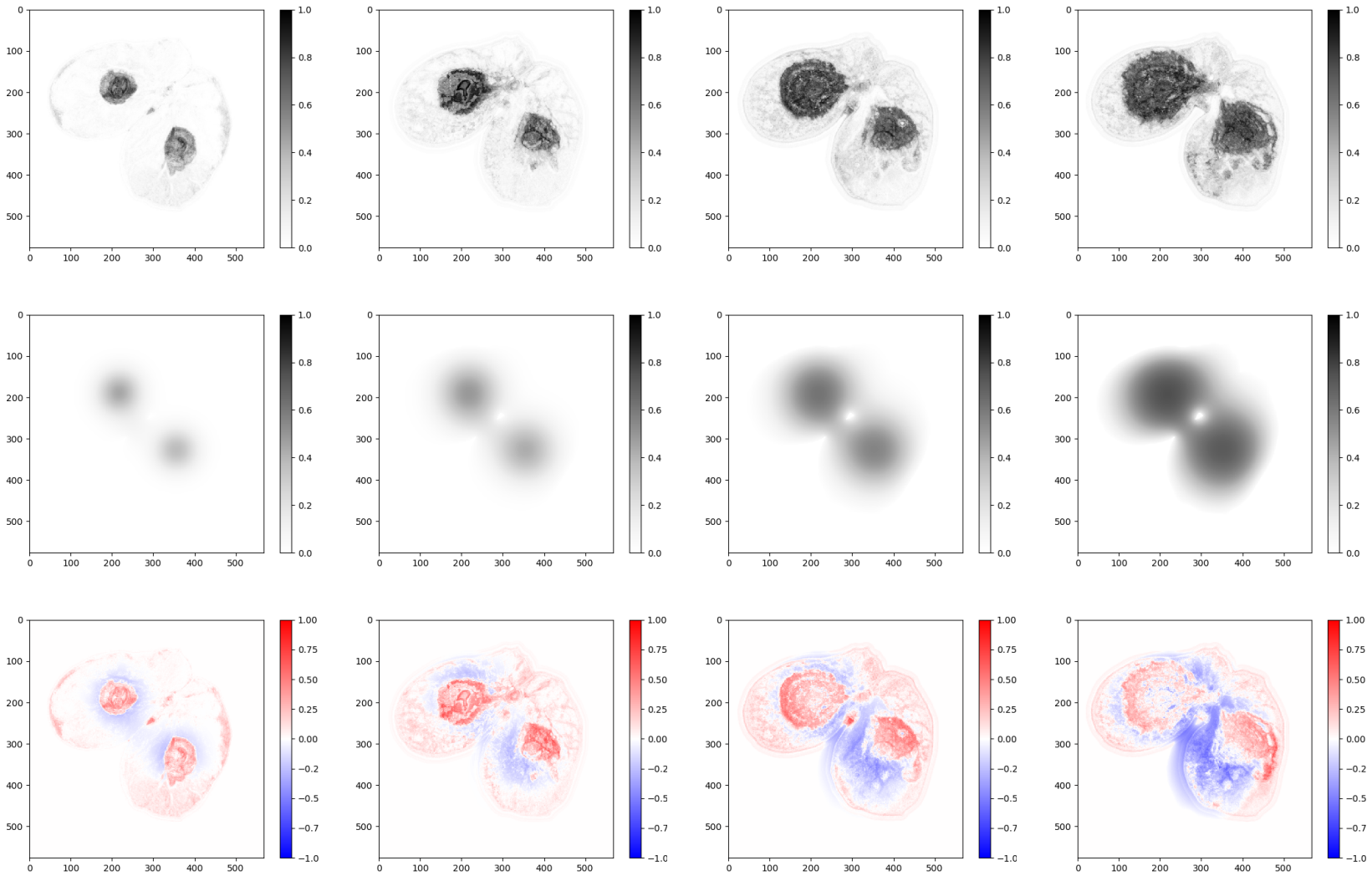

Figure G: Solara N°7

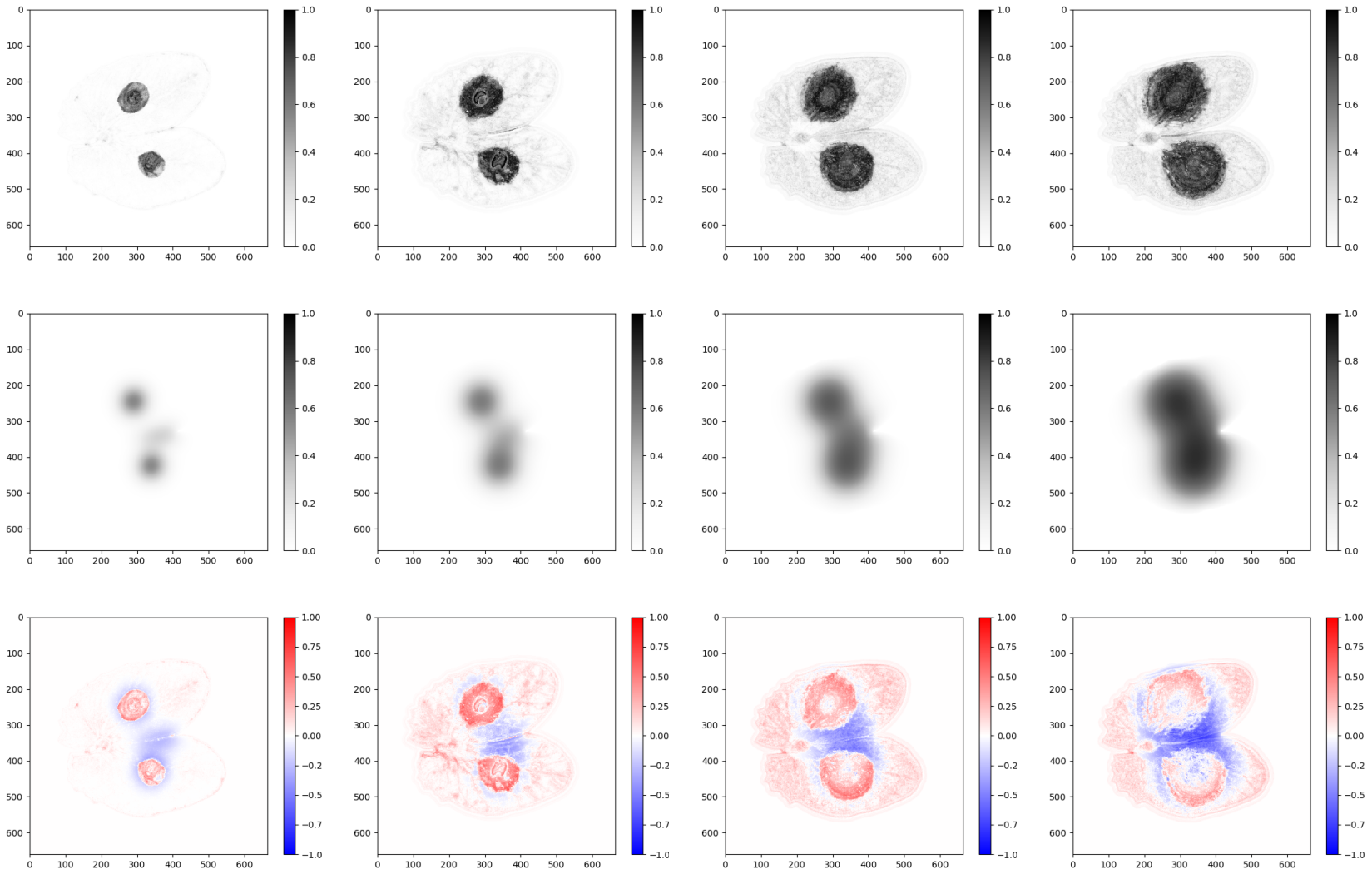

Figure H: Solara N°8

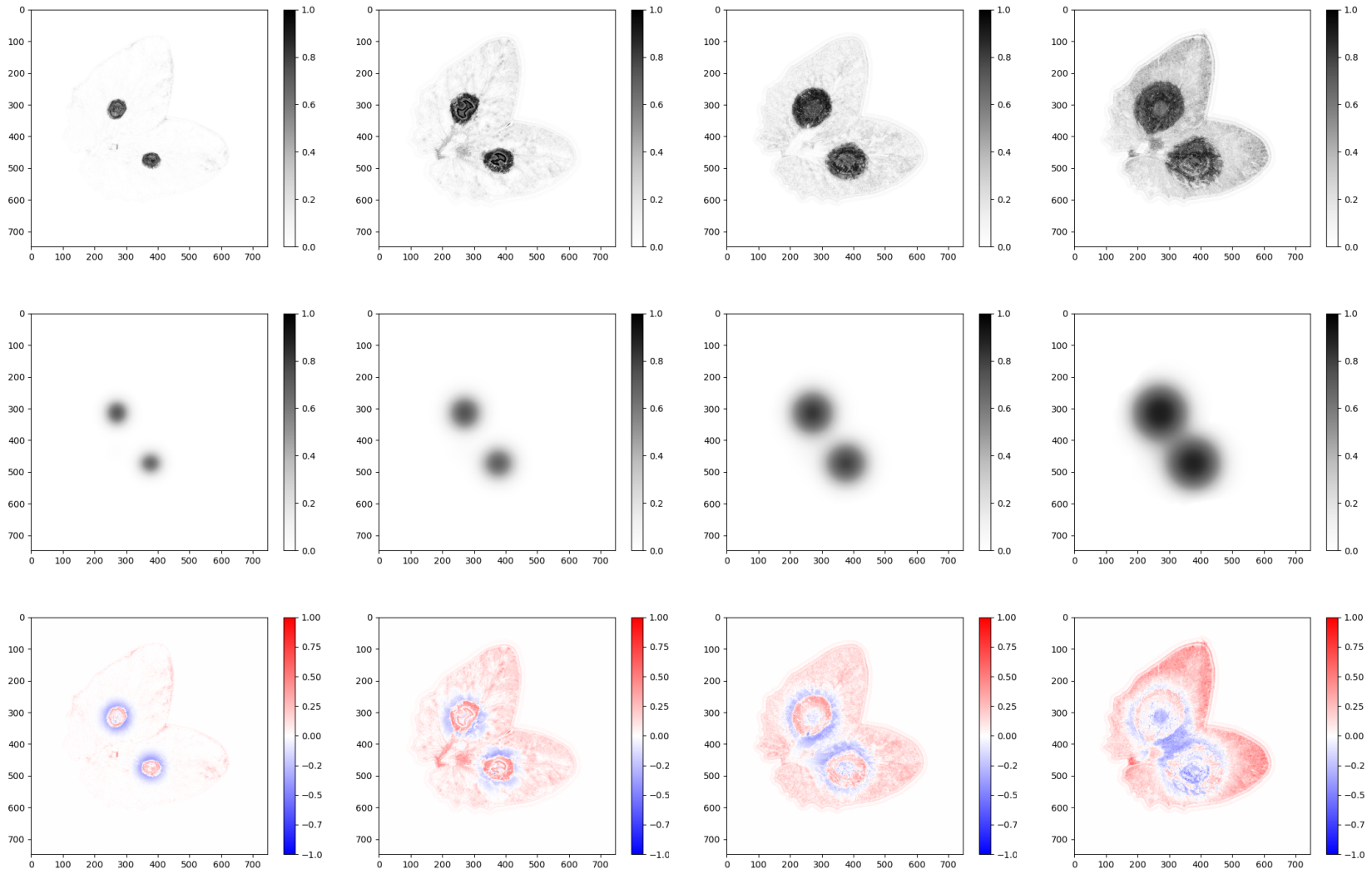

Figure I: Solara N°9

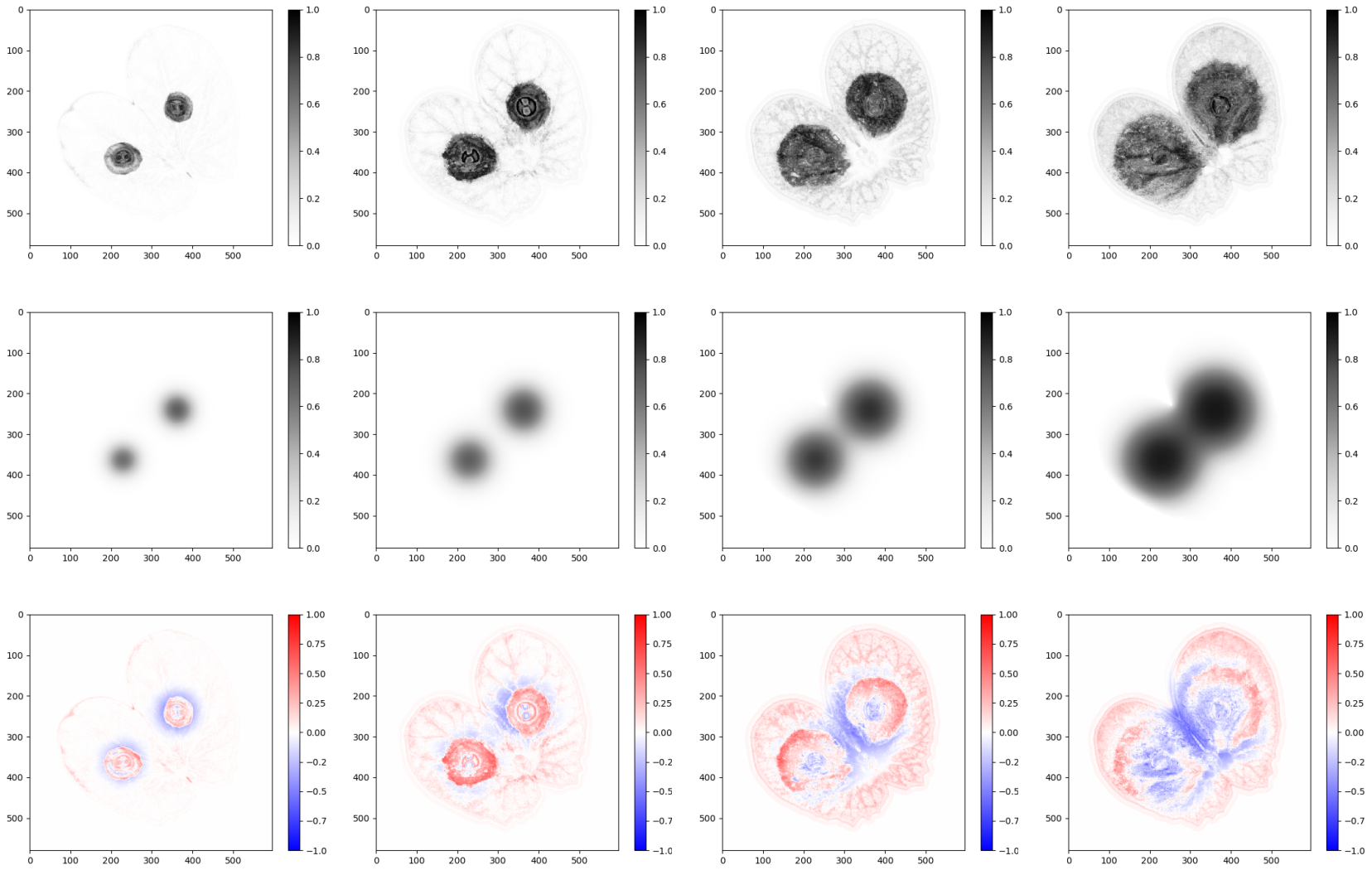

Figure J: Solara N°10

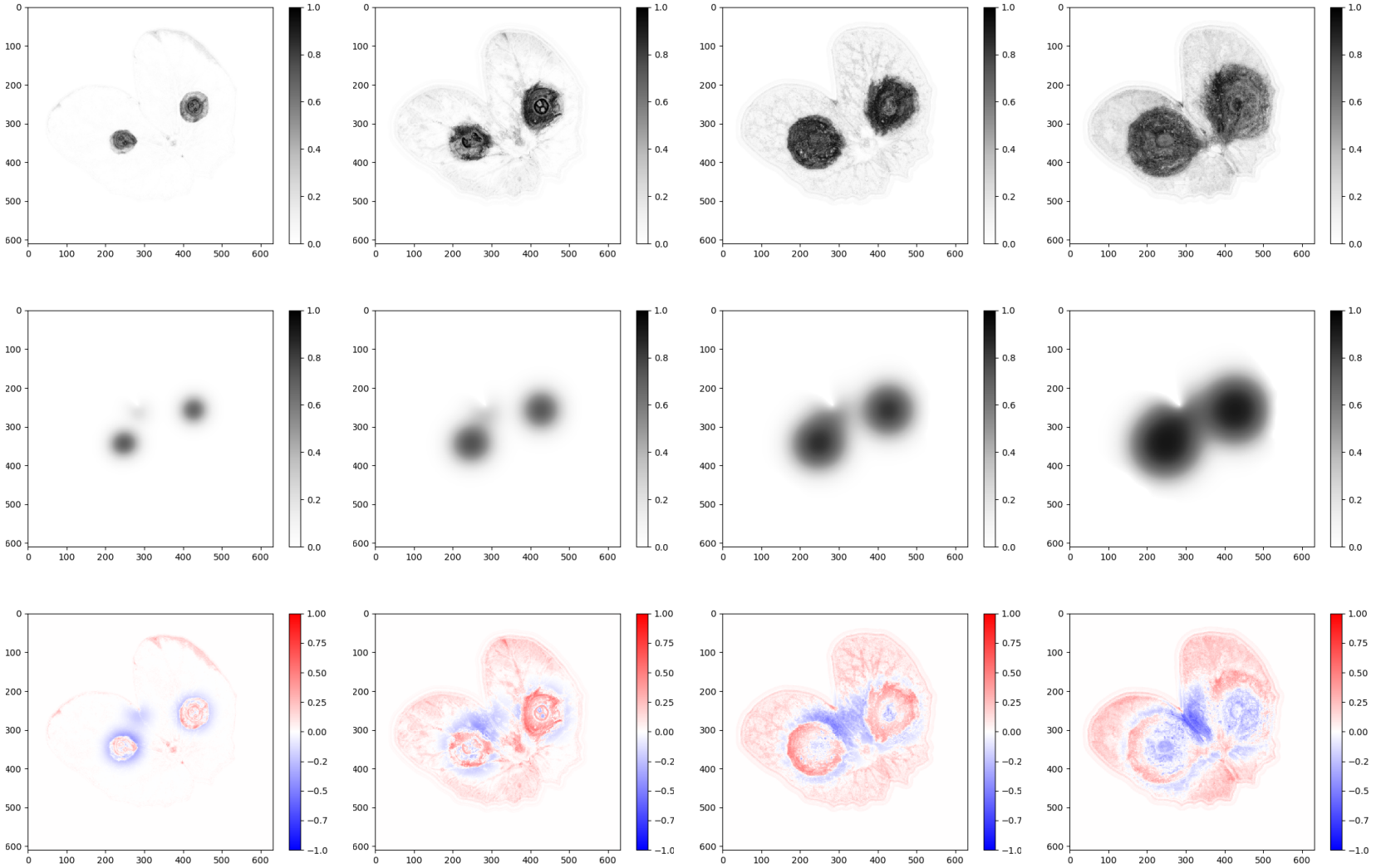

Figure K: Solara N°11

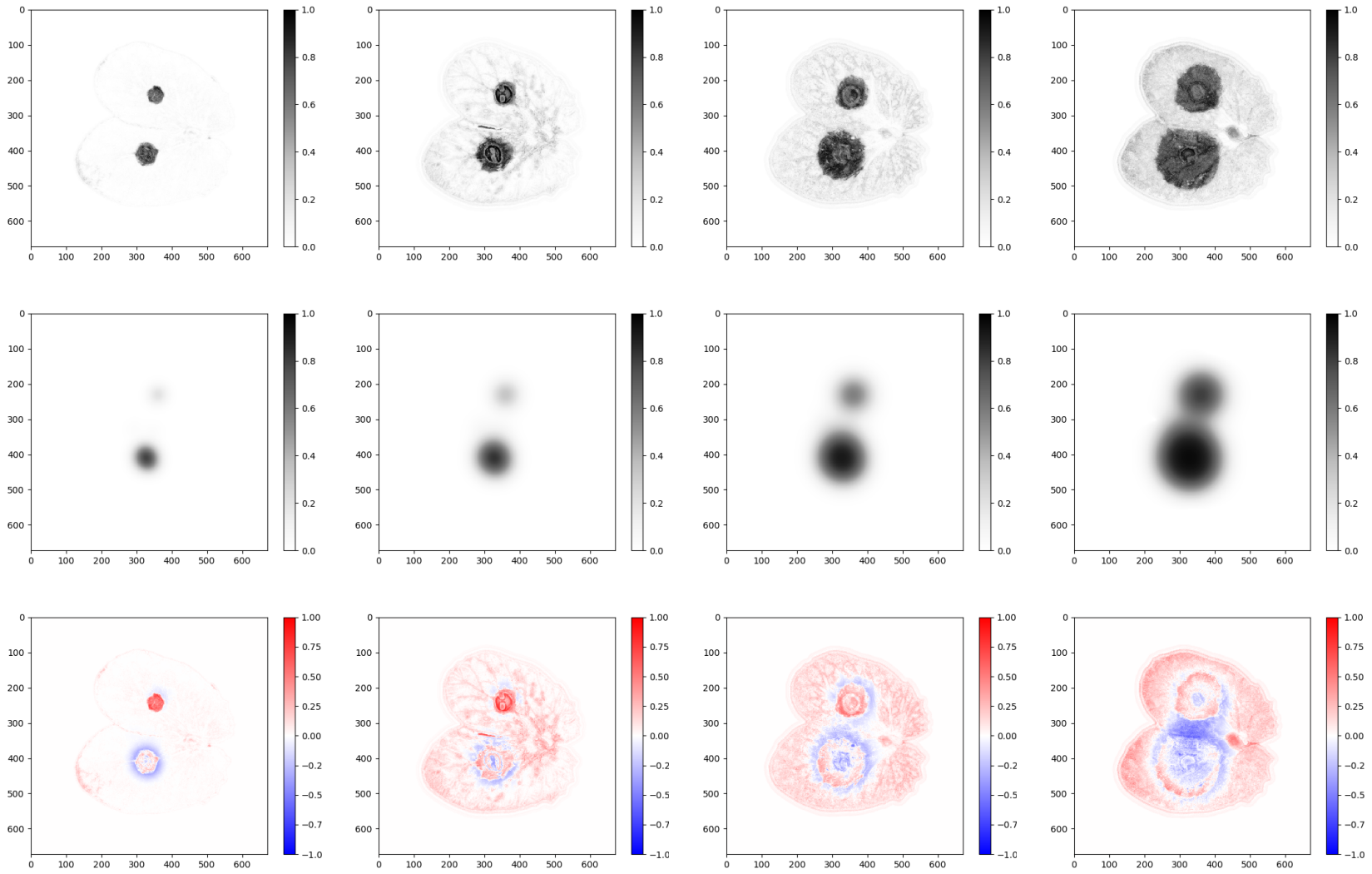

Figure L: Solara N°12

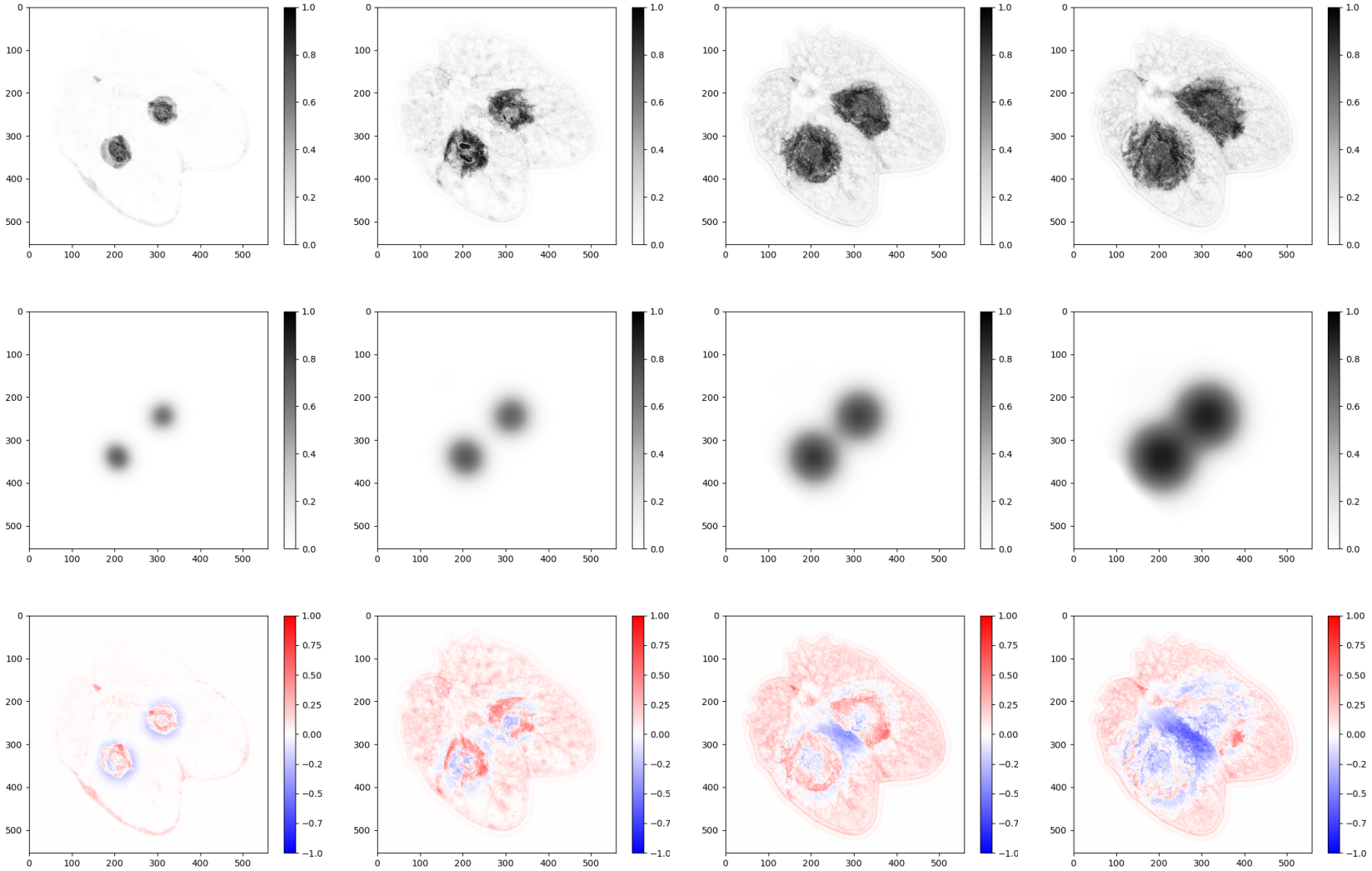

Figure M: Solara N°13

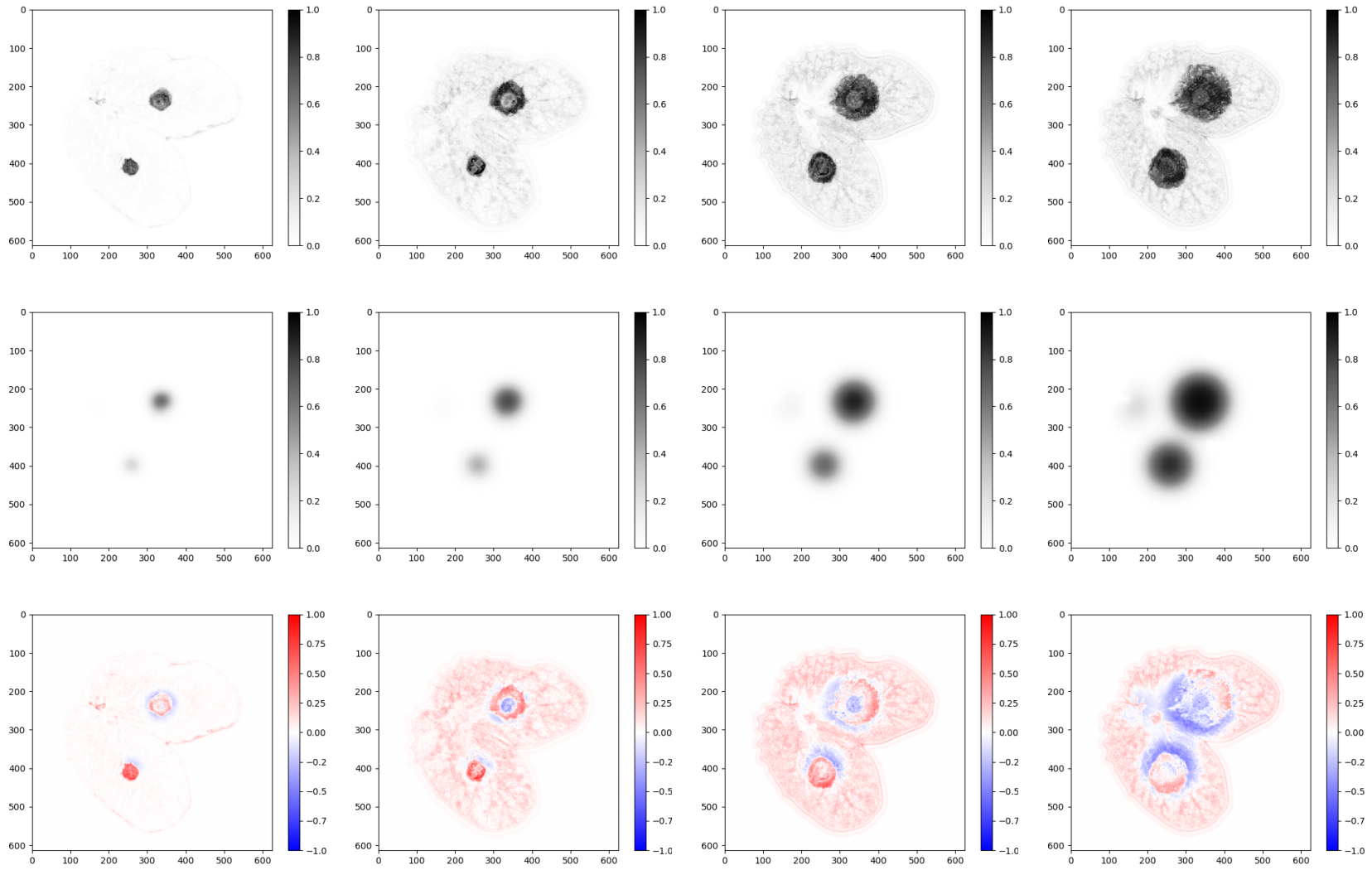

Figure N: Solara N°14

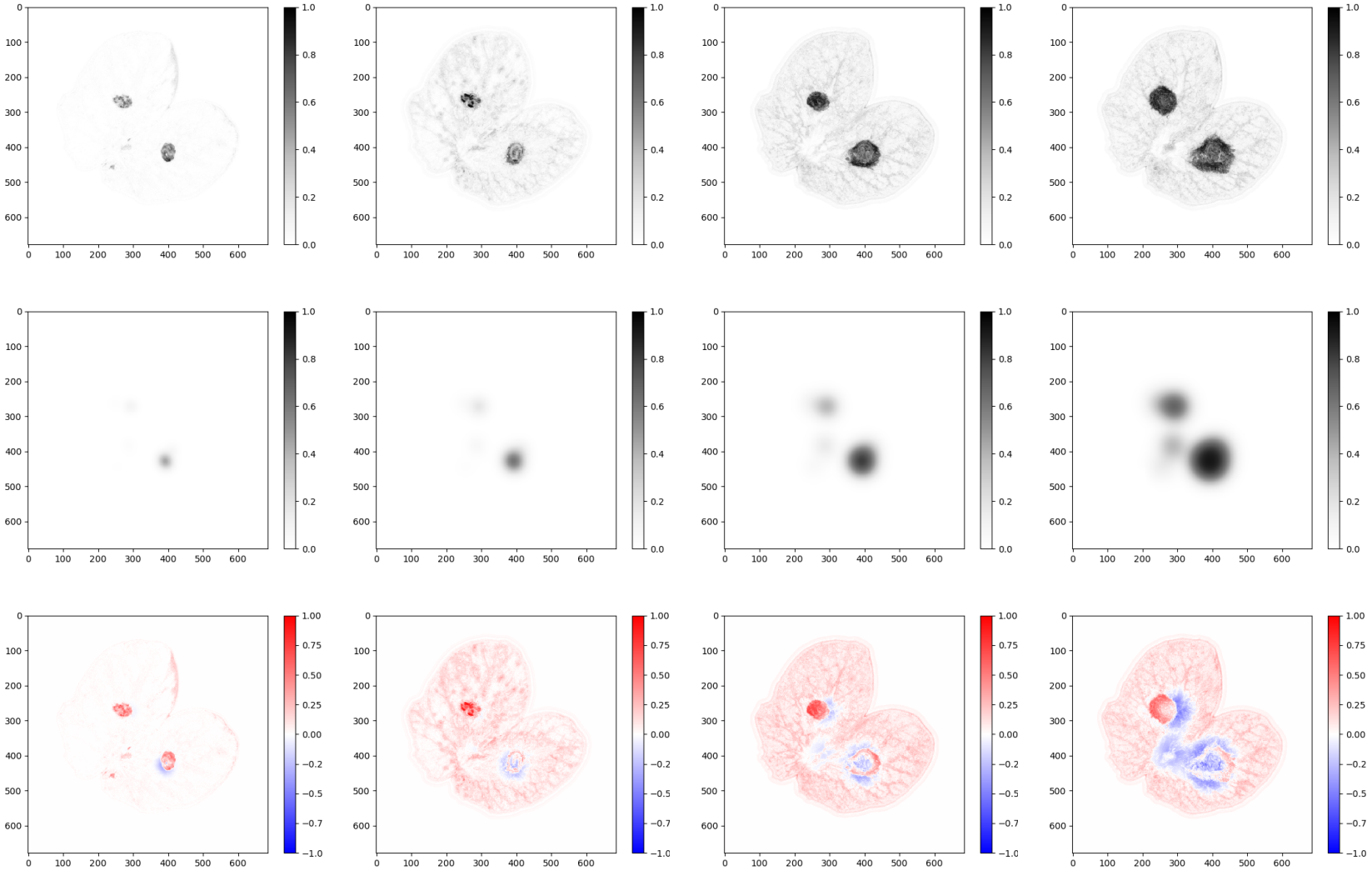

Figure O: Solara N°15

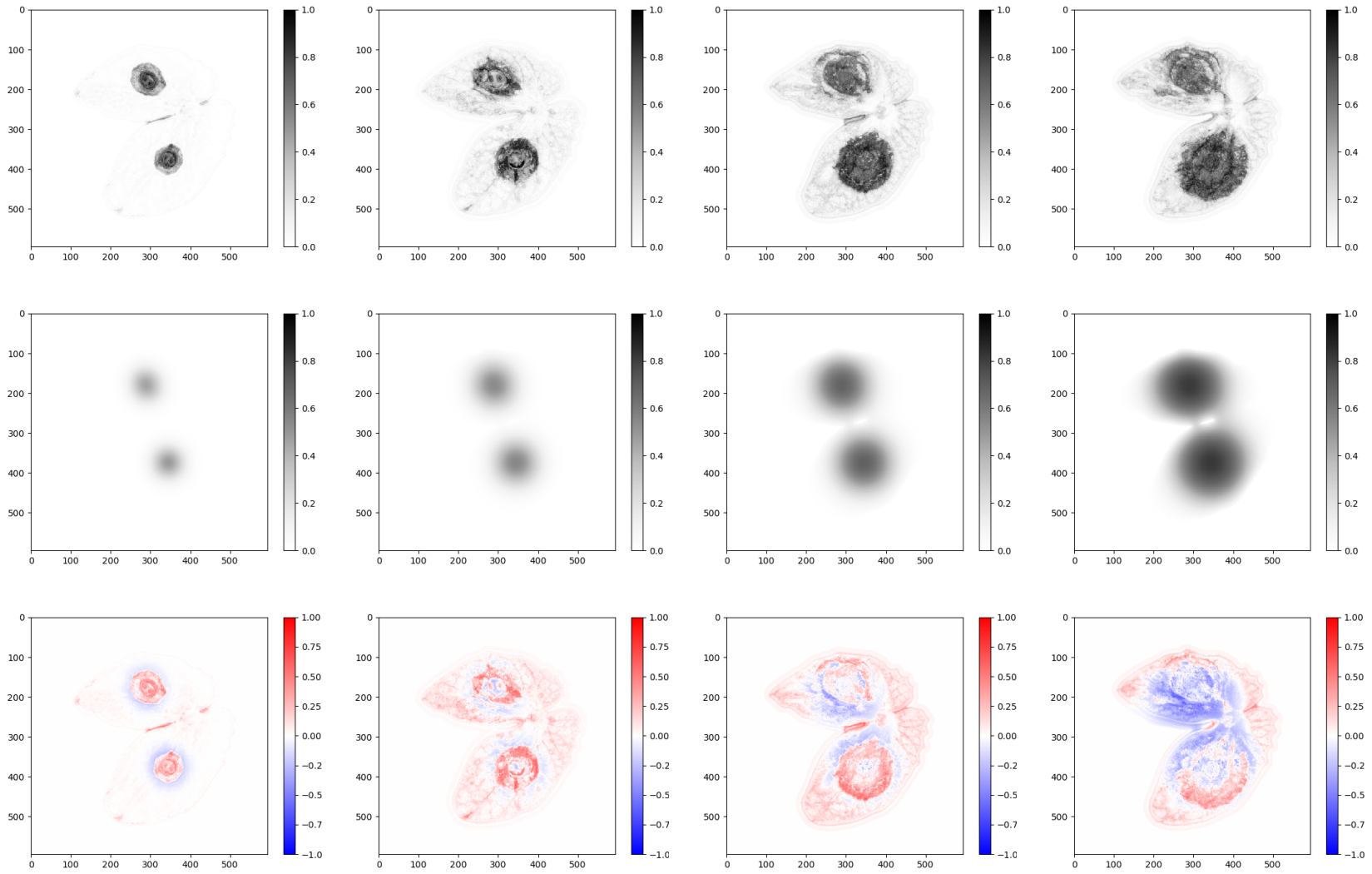

Figure P: Solara N°16

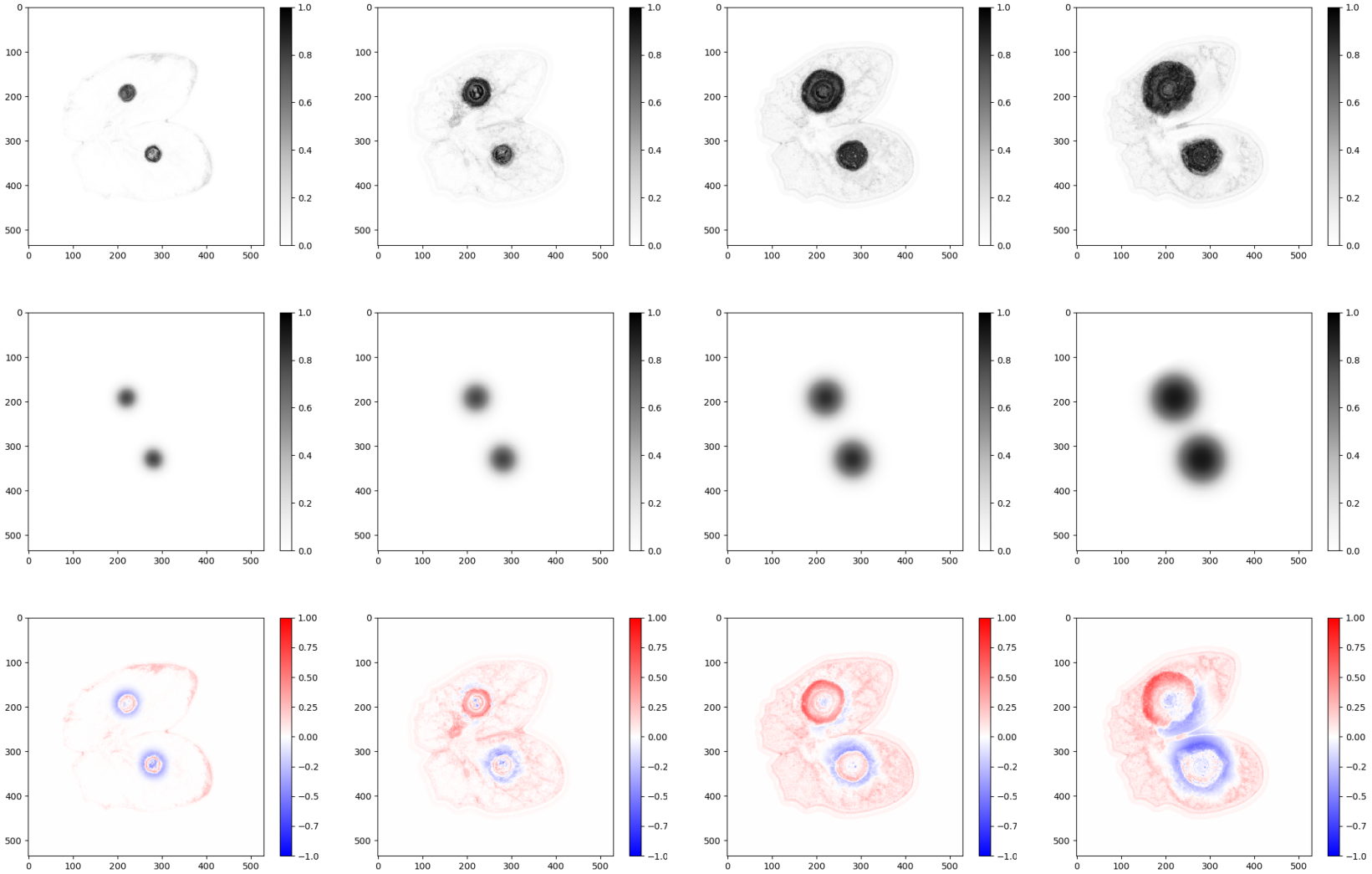

Figure Q: James N°17

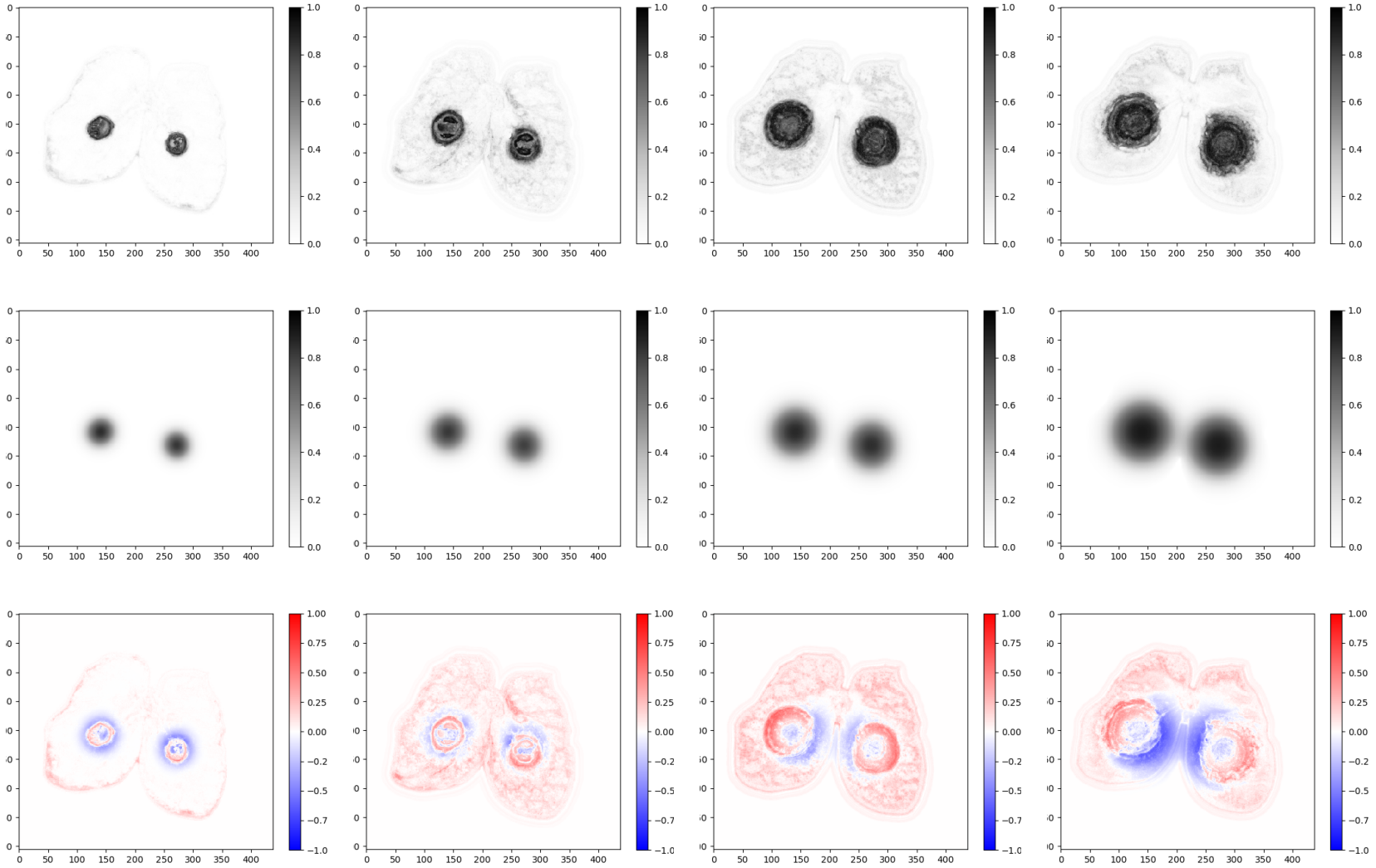

Figure R: James N°18

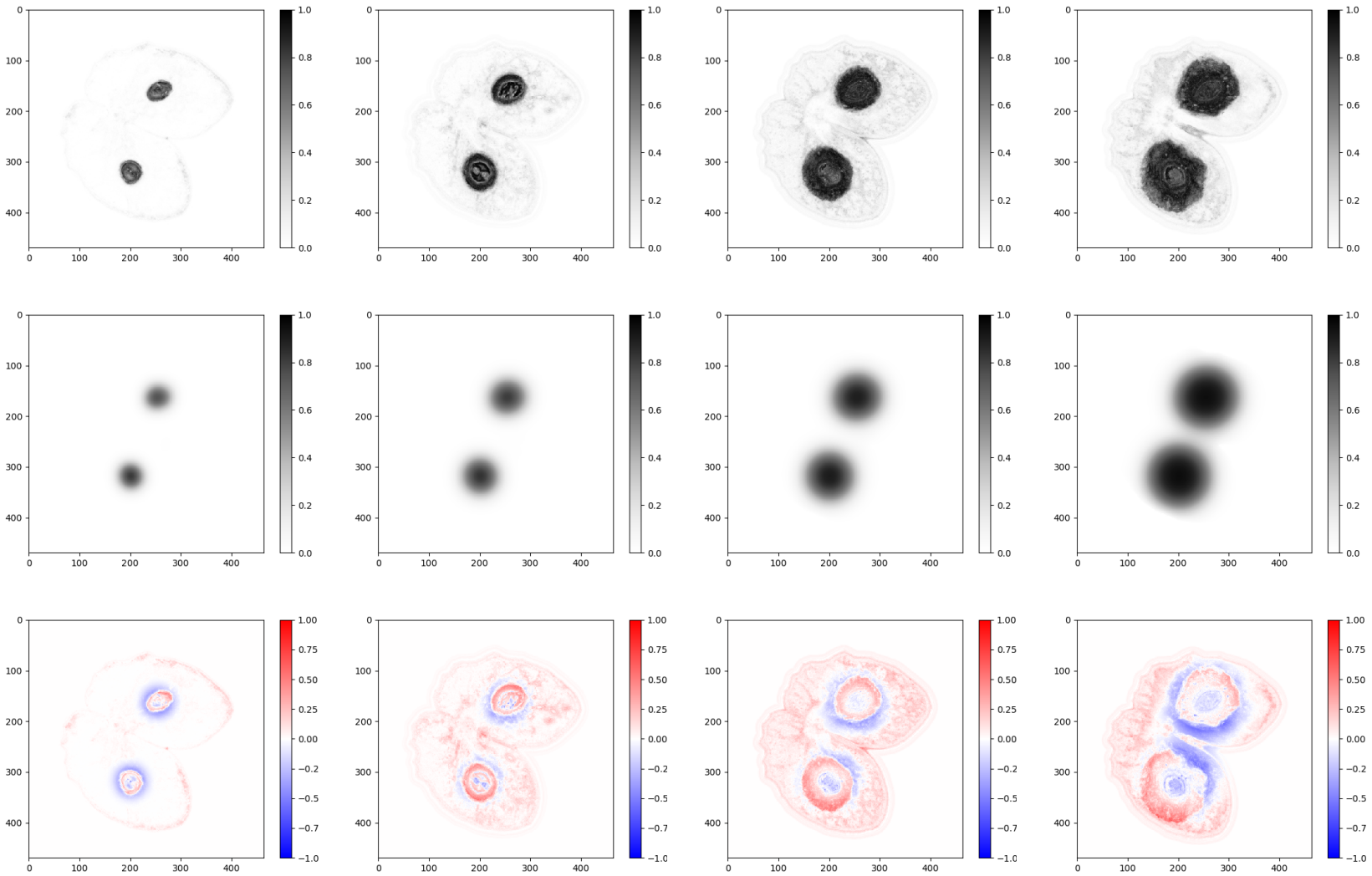

Figure S: James N°19

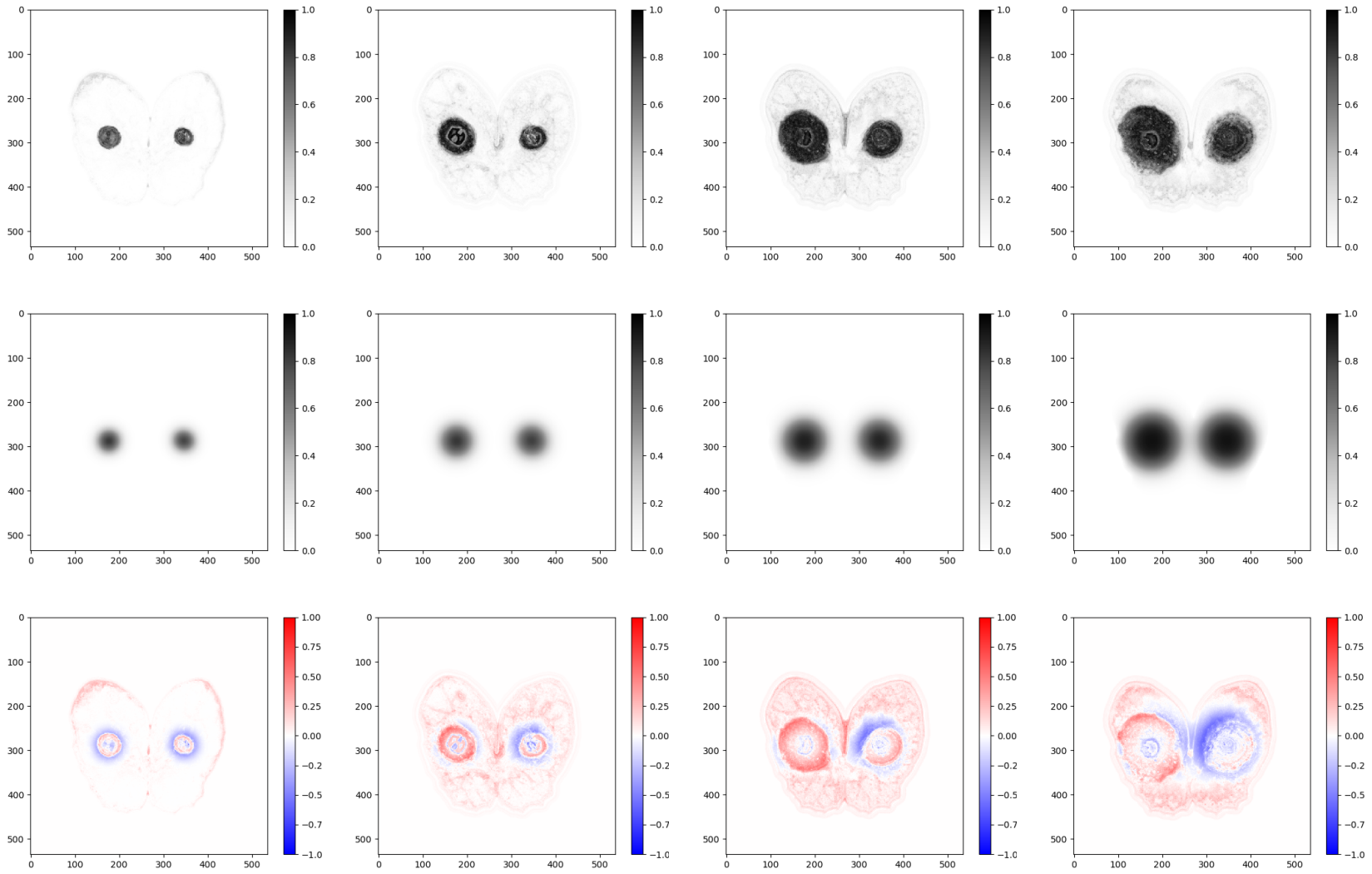

Figure T: James N°20

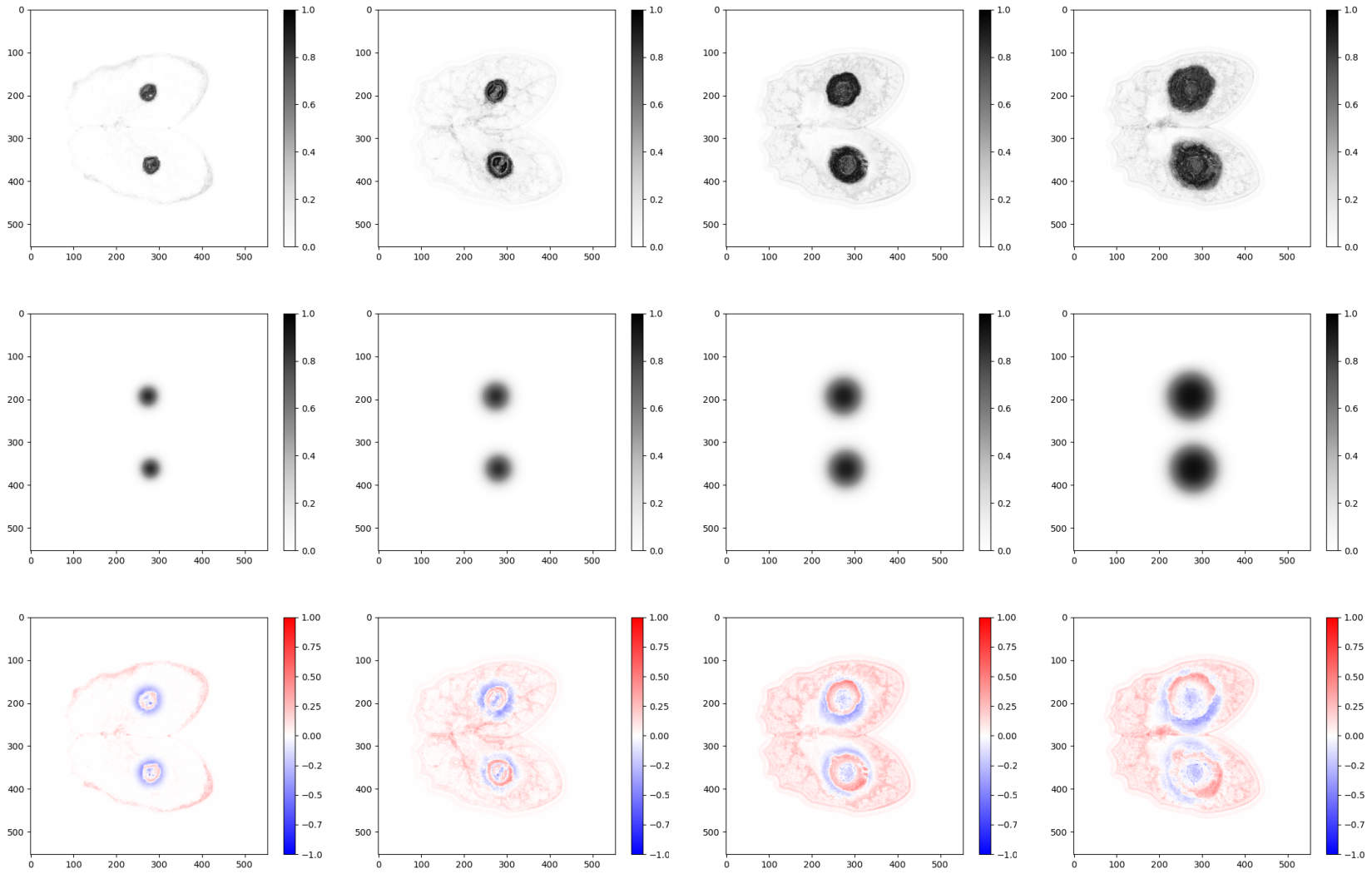

Figure U: James N°21

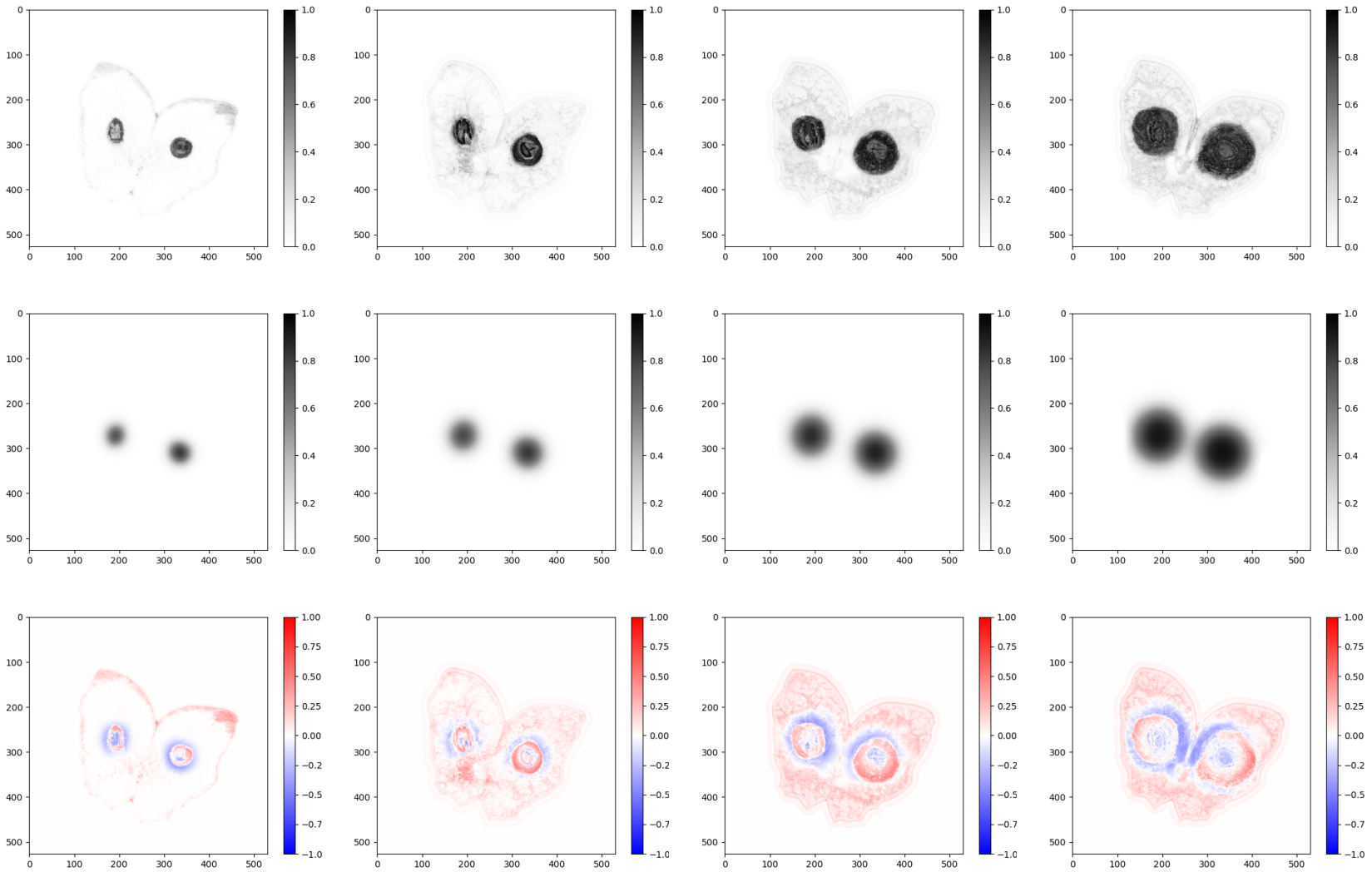

Figure V: James N°22

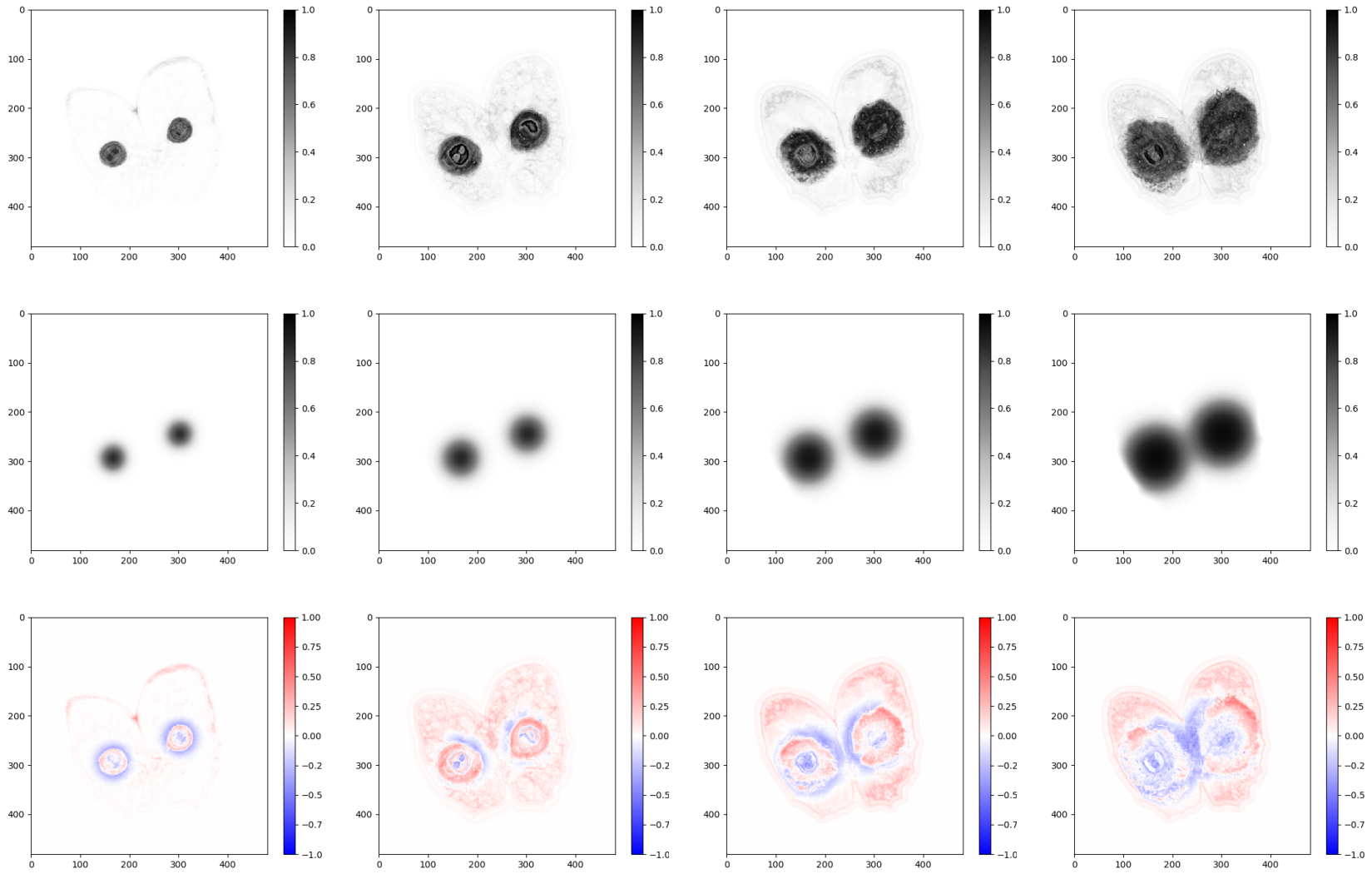

Figure W: James N°23

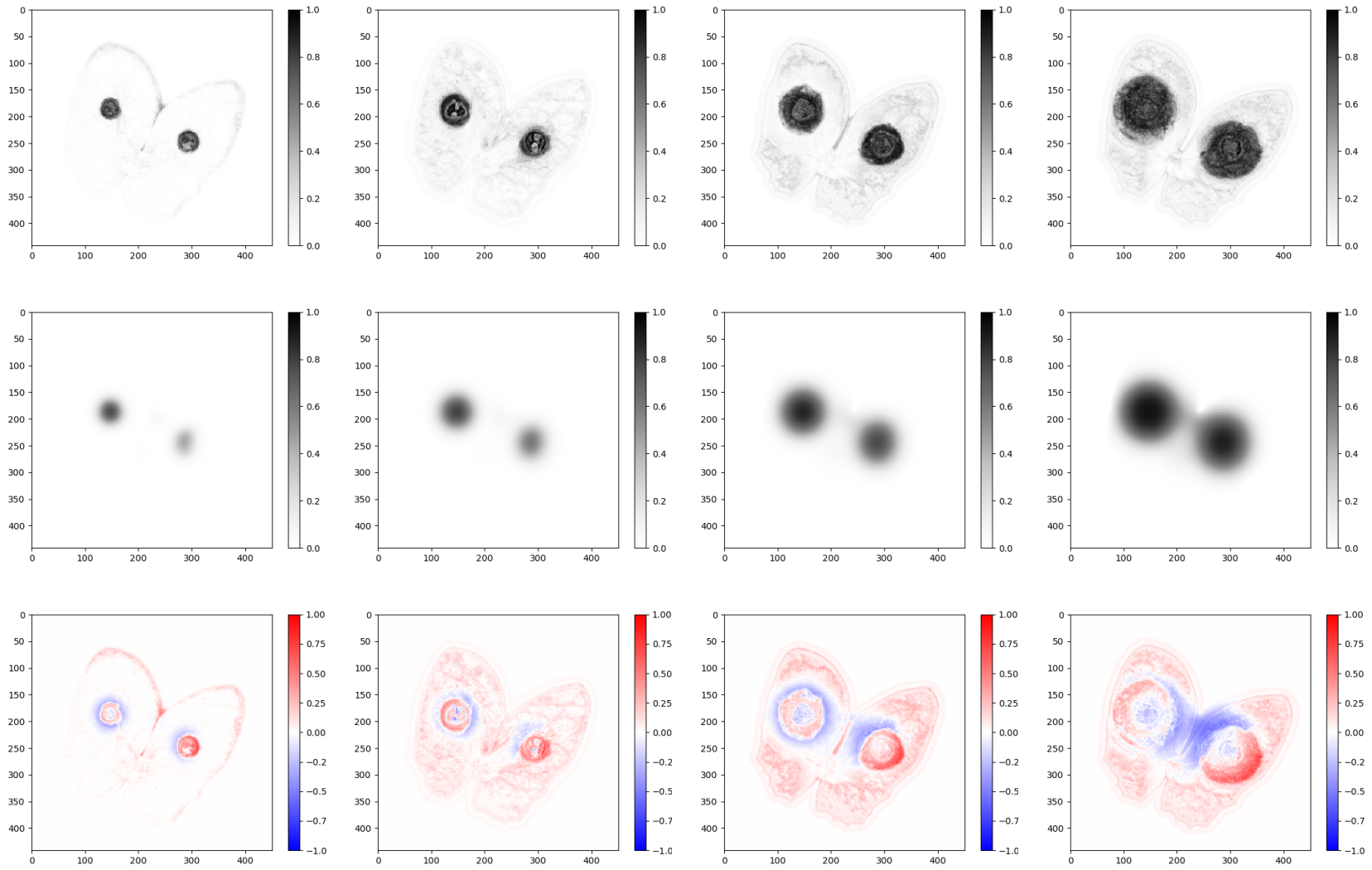

Figure X: James N°24

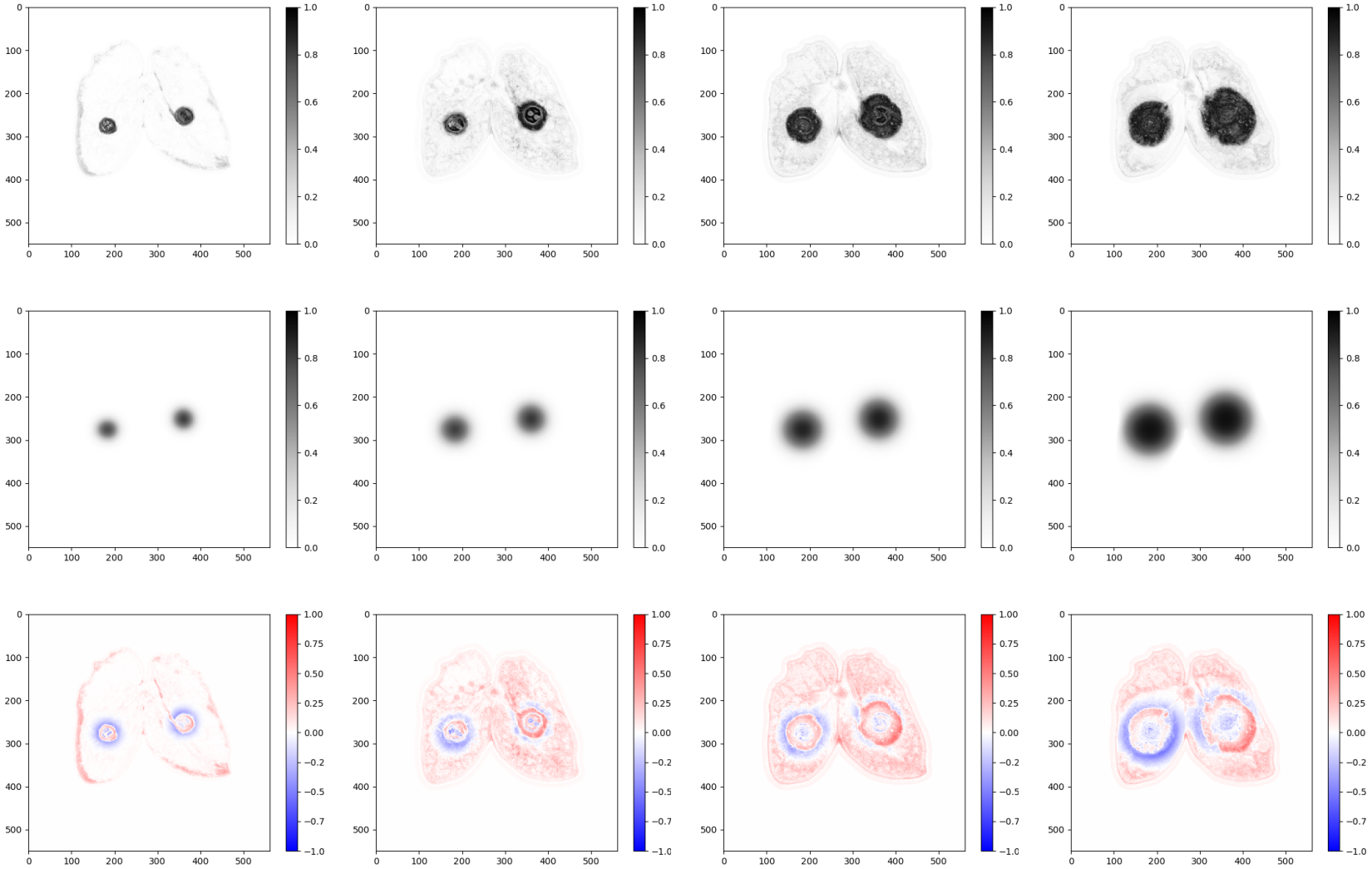

Figure Y: James N°25

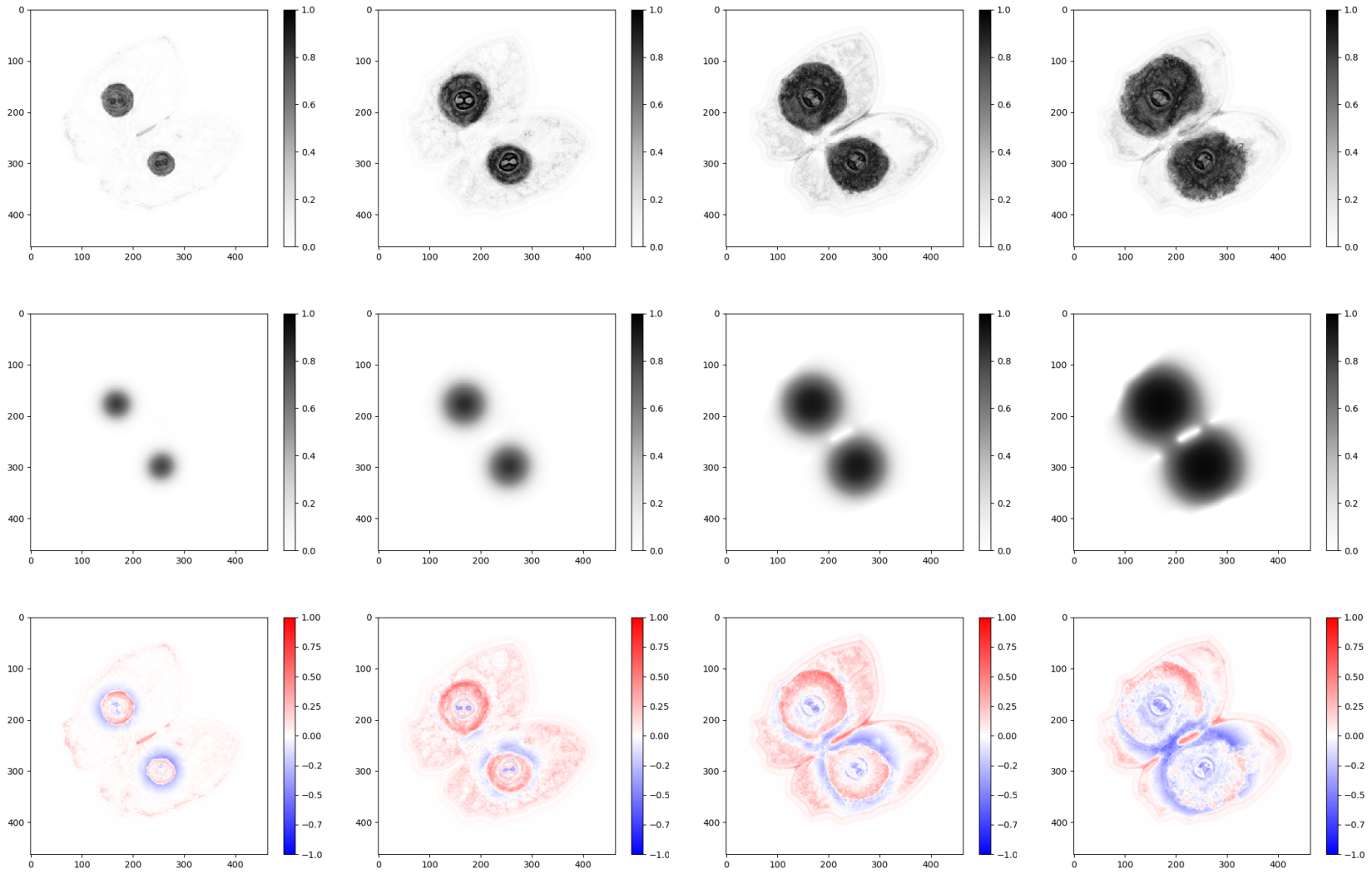

Figure Z: James N°26

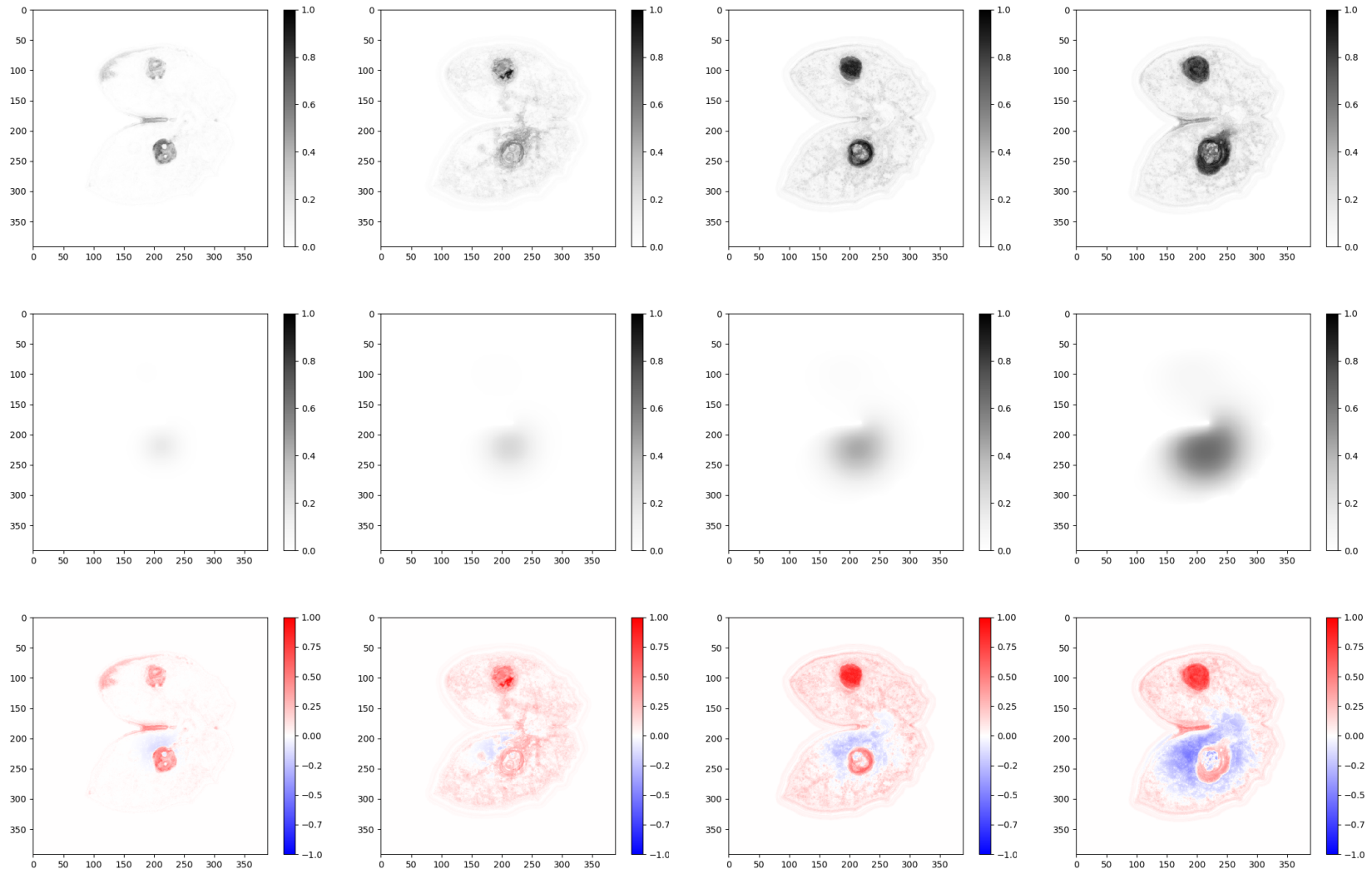

Figure AA: James N°27

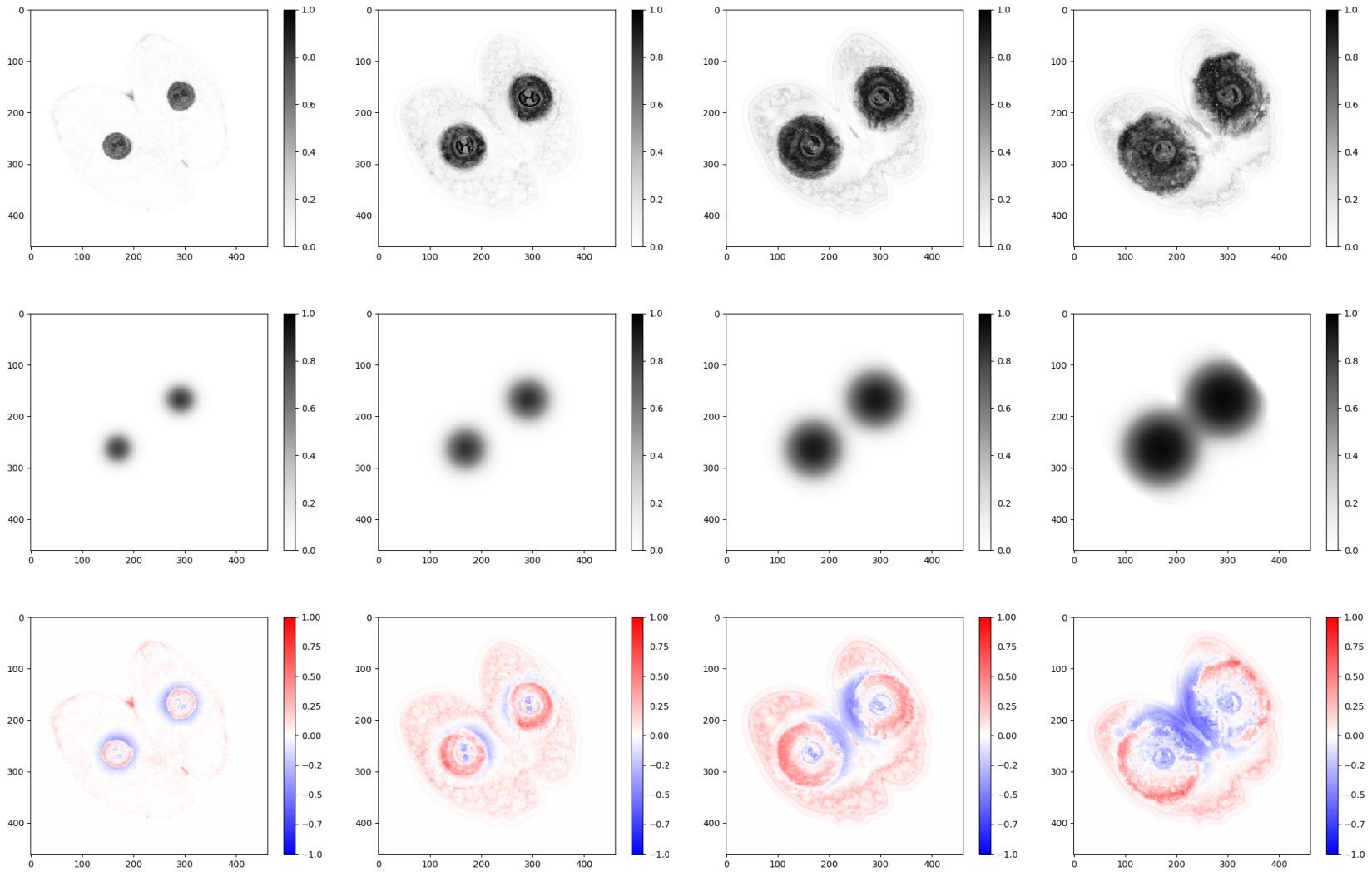

Figure AB: James N°28

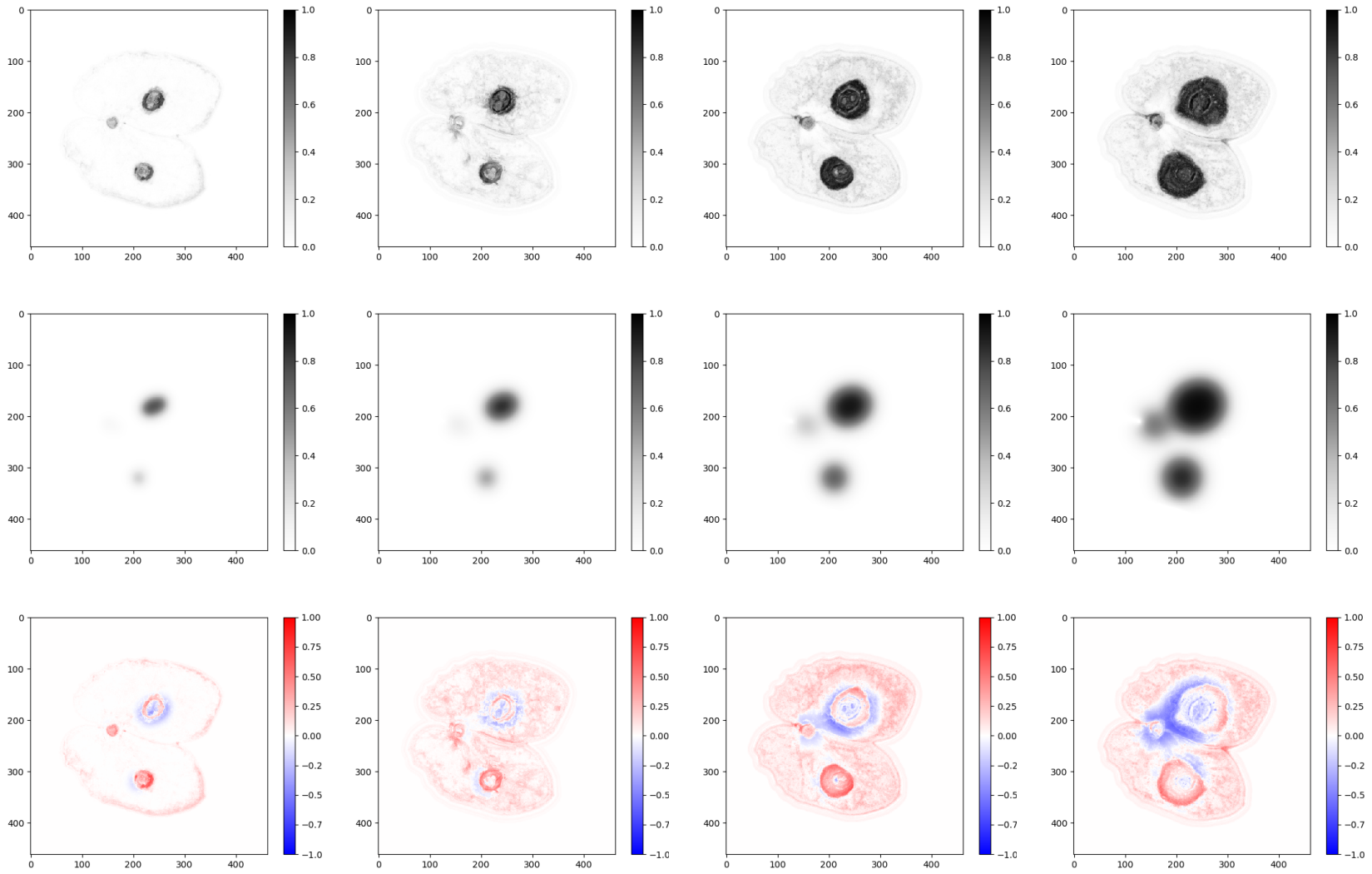

Figure AC: James N°29

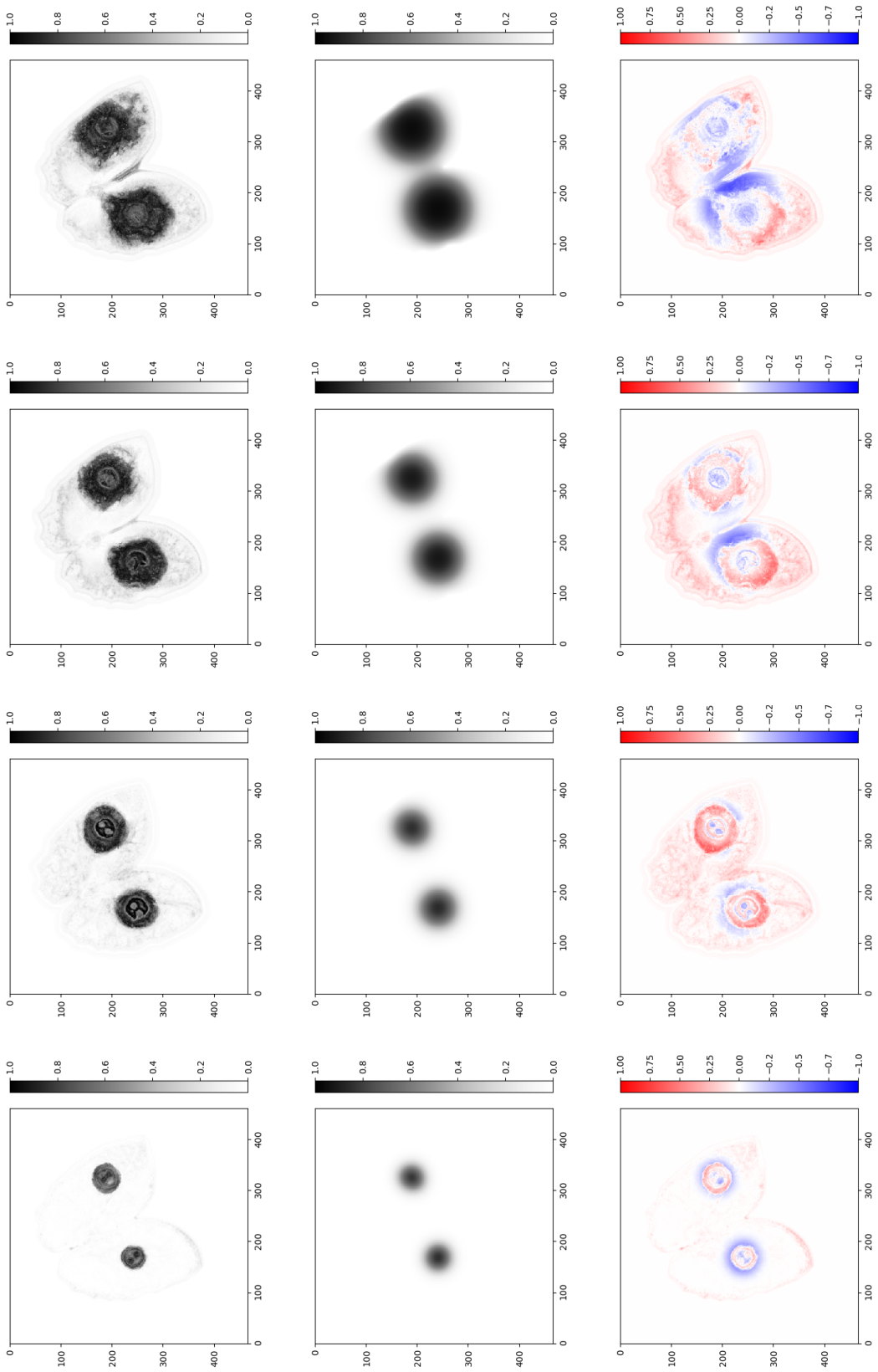

Figure AD: James N°30

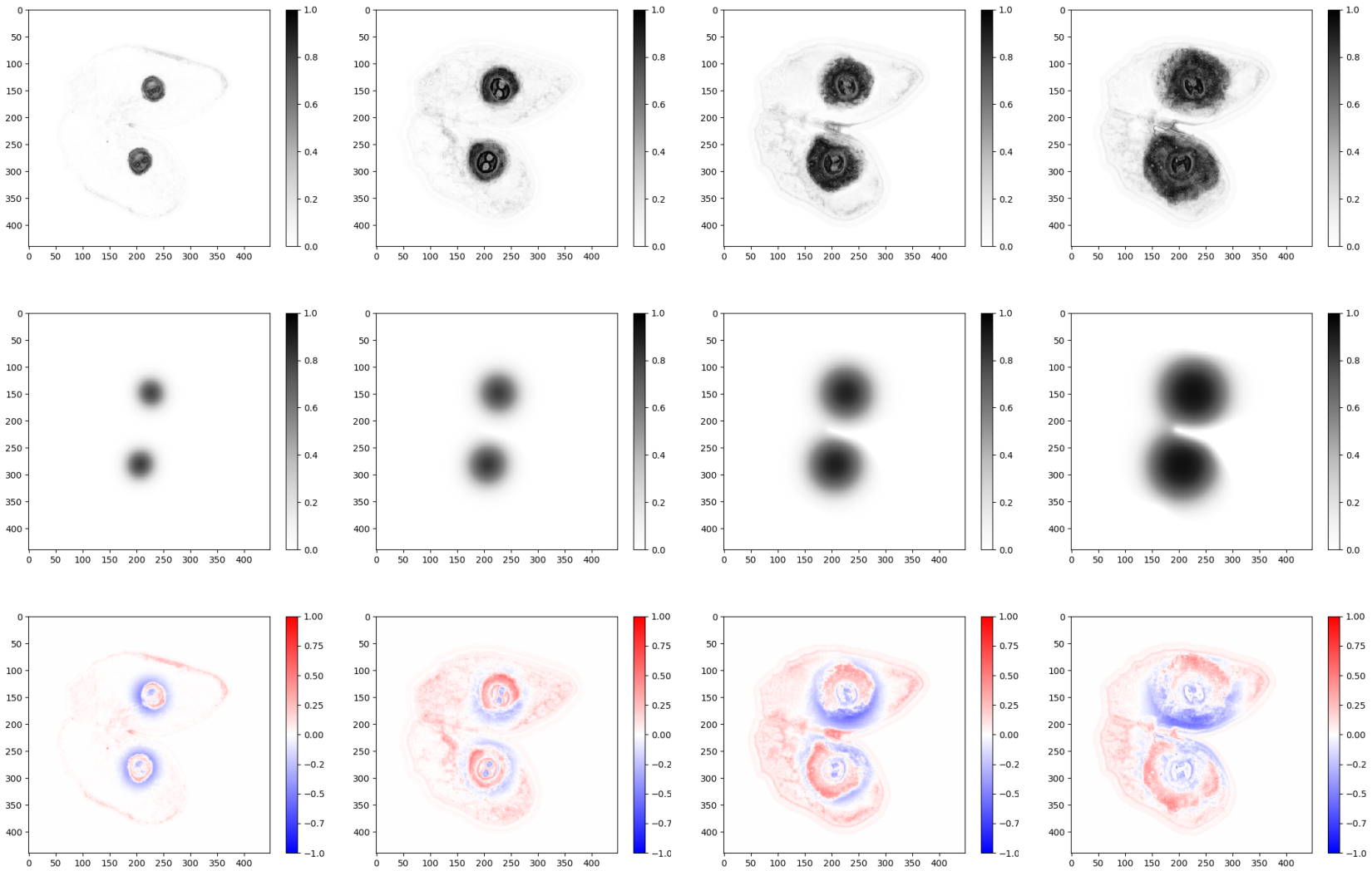

Figure AE: James N°31

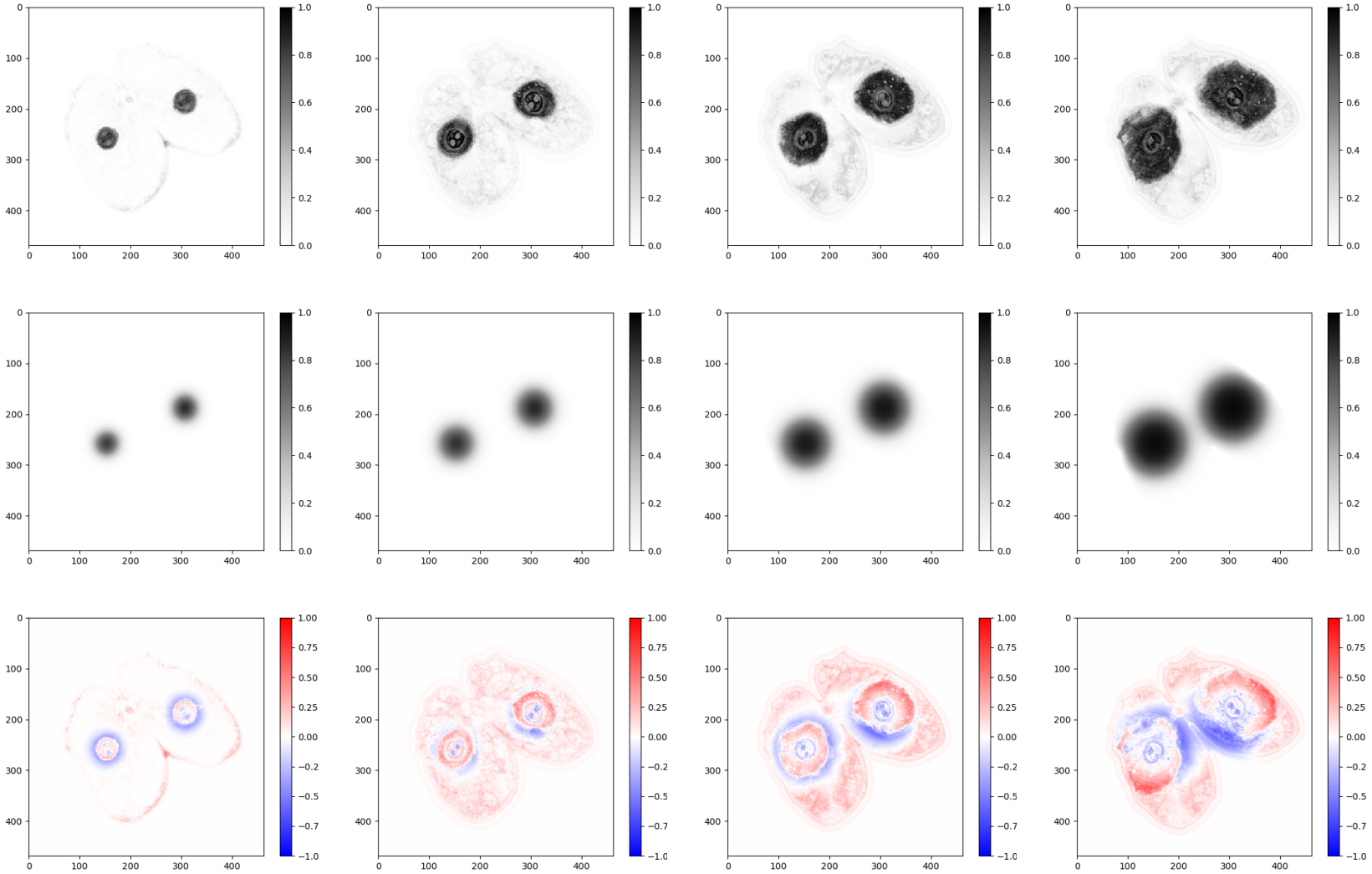

Figure AF: James N°32

S3.2 Visualization of raw residuals

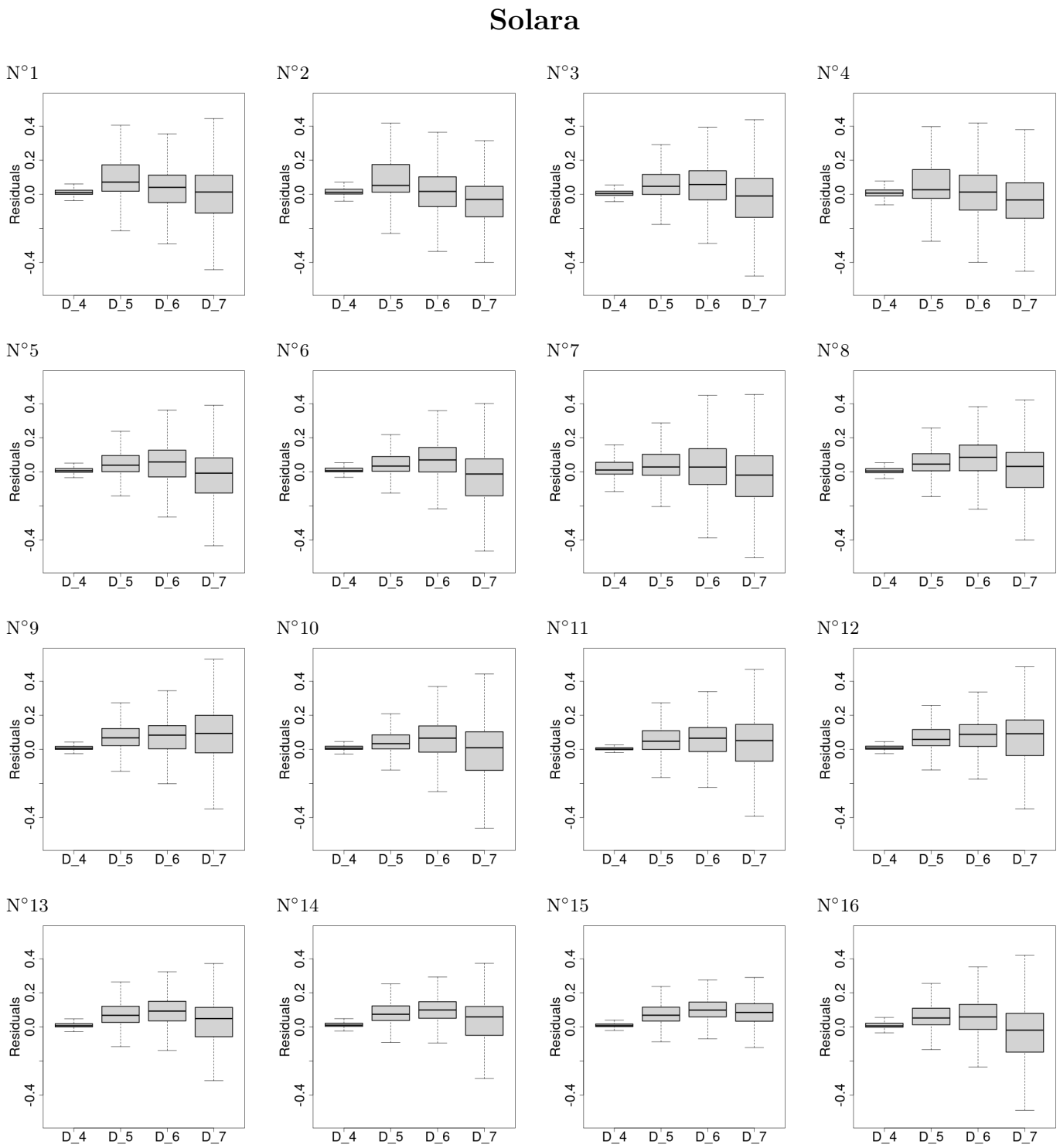

Figure AG: Distribution of raw residuals against dates after inoculation for each Solara stipule pairs.

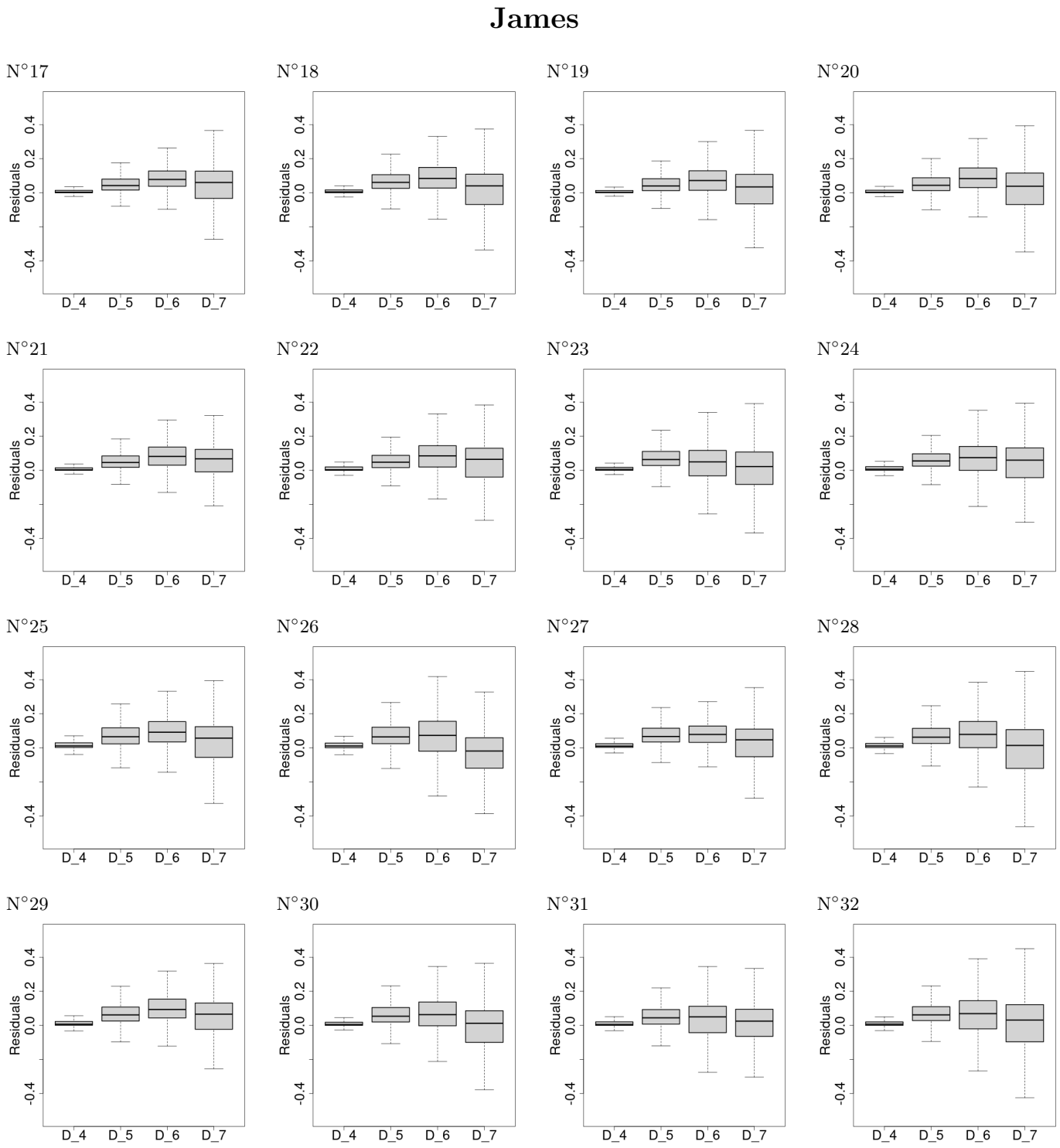

Figure AH: Distribution of raw residuals against dates after inoculation for each James stipule pairs.

S3.3 Model prediction against data (pixel versus pixel)

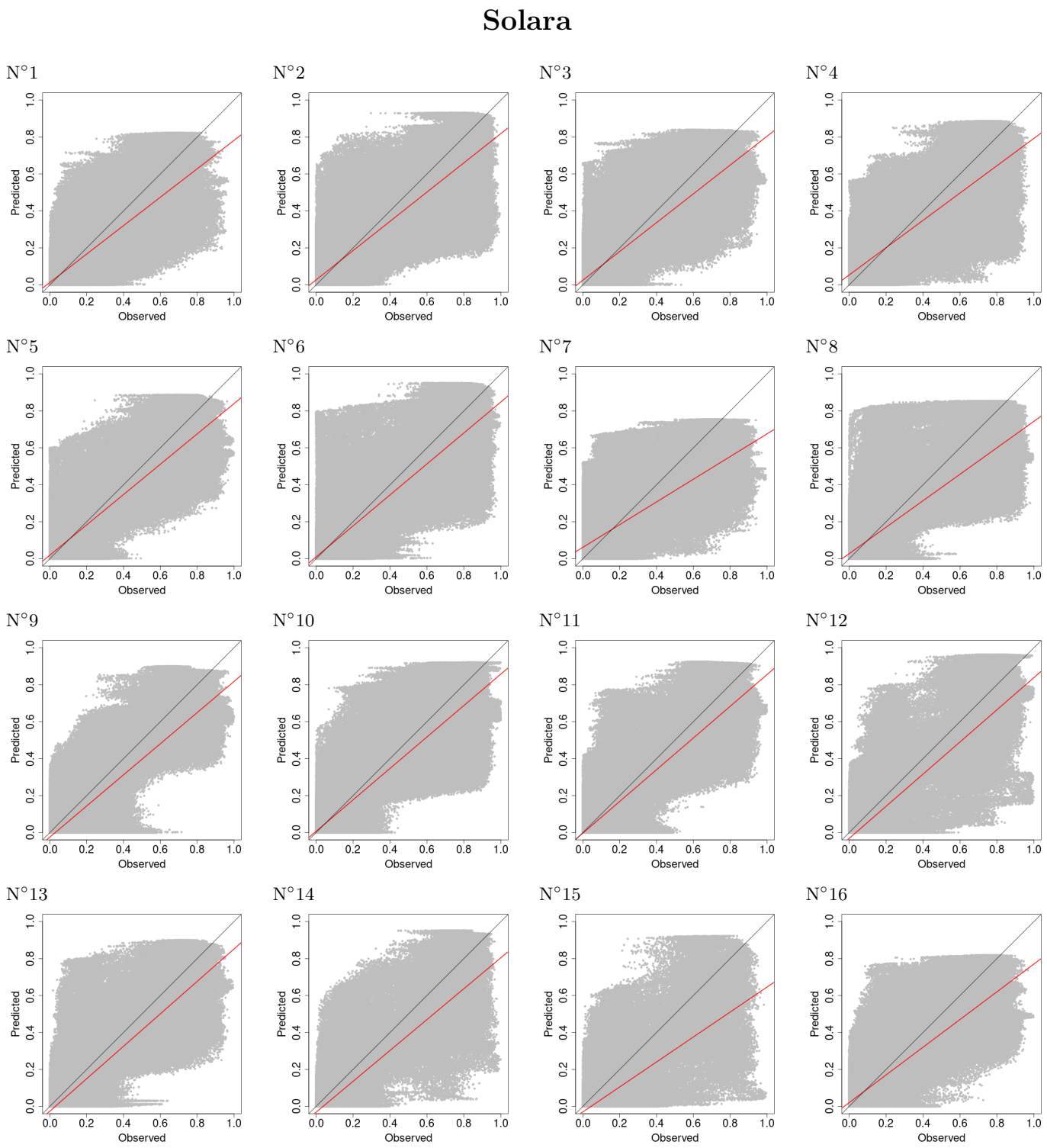

Figure AI: Comparison of infection probability predicted by the reaction-diffusion models against the values of the probability images for the Solara cultivar. The black line is the first bisector that indicates a perfect agreement between values while the red line is the estimated linear relationship between prediction and observation.

James

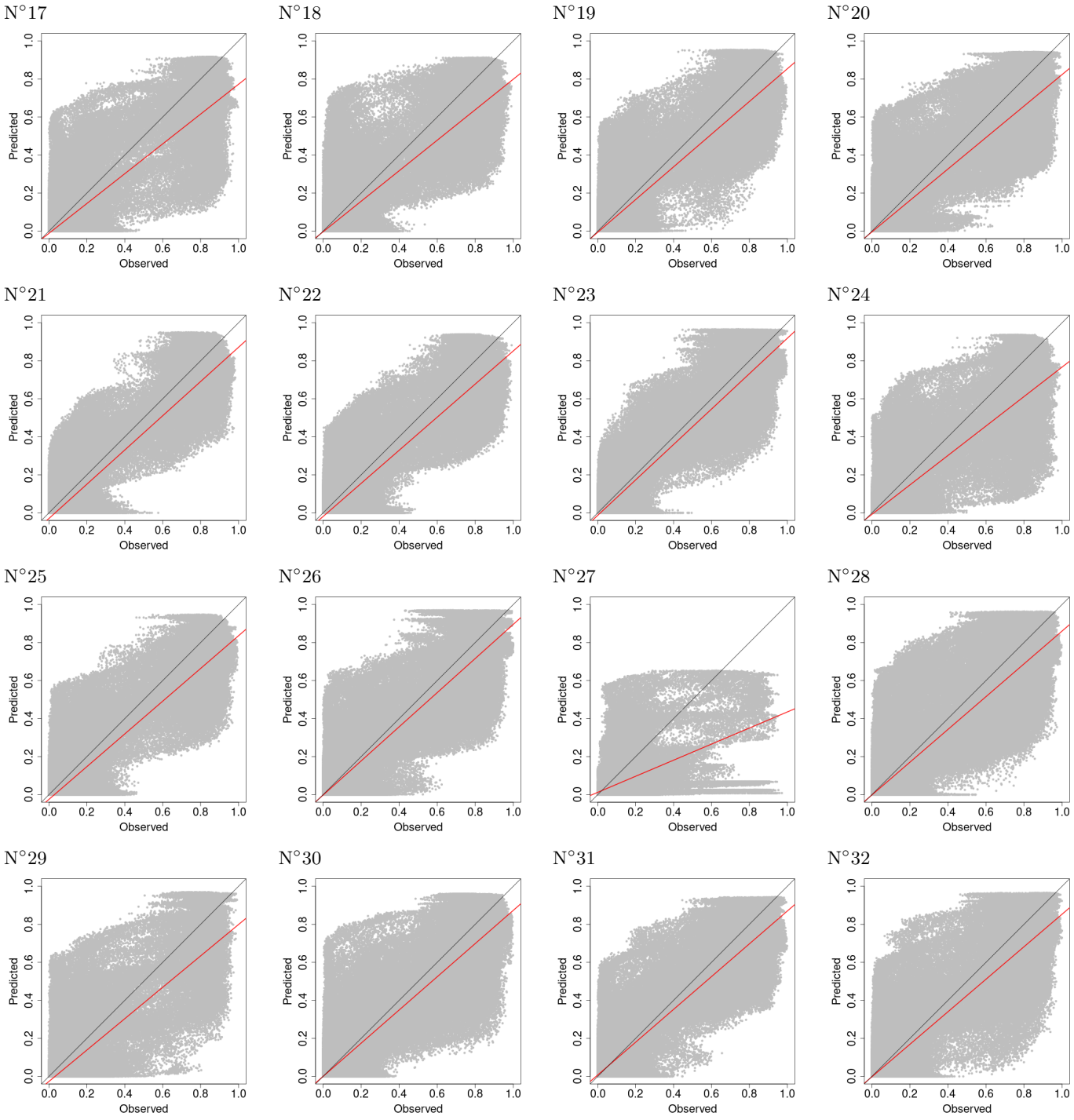

Figure AJ: Comparison of infection probability predicted by the reaction-diffusion models against the values of the probability images for the James cultivar. The black line is the first bisector that indicates a perfect agreement between values while the red line is the estimated linear relationship between prediction and observation.