



	Experiment title: Internal cranial anatomy of a very early plesiosaur revealed with x-ray synchrotron microtomography	Experiment number: LS 2546
Beamline: ID 17	Date of experiment: from: 10 Nov. 2016 to: 15 Nov. 2016	Date of report:
Shifts: 12	Local contact(s): Dr Vincent Fernandez	<i>Received at ESRF:</i>

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Report: We received the data from this experiment earlier this month (February 2017). We requested 9 shifts and were allocated 15 shifts. In fact, due to travel commitments we could only make use of 12 of these shifts. Furthermore, although we requested ID 19, we were granted time on ID 17, a good alternative. Because of these changes, we were able to scan not only the plesiosaur skull (*Stratesaurus*) described in the proposal, but and also two closely related fossil marine reptiles belonging to the genus *Neusticosaurus*. Pilot scans of all three specimens using micro-CT had yielded low intrinsic contrast between bone and rock, meaning that we had not previously been able to resolve any anatomical details.

As we only received the data recently, at present we have only been able to preliminarily examine the results, and have not had the opportunity to do 3D reconstructions of the anatomy. However, it is clear that the experiment obtained very clear images, with good contrast between bone and rock that we were not previously able to obtain (see Figure 1, below: showing a tomograph through the skull of *Stratesaurus*).

Furthermore, the resolution of the scans of very good (21.77 μm for all specimens and 6.35 μm for regions of interest), and details such as the cancellous internal structure of bones are evident.

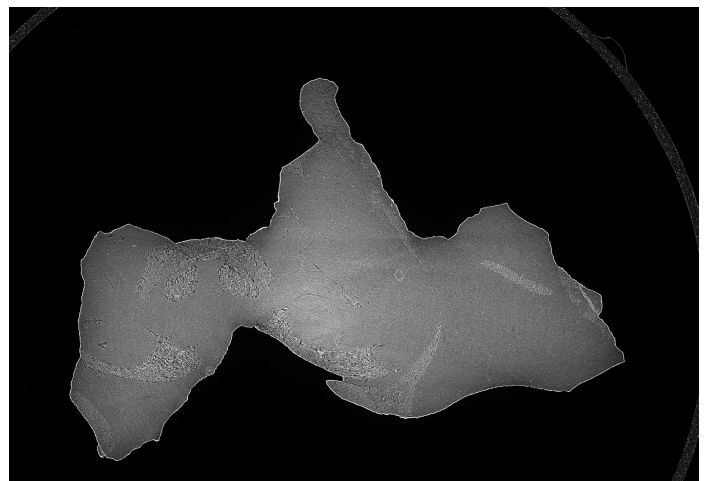


Figure 1. Tomograph through skull of *Stratesaurus*