

Supplementary Information for

## Evidence of diet, deification, and death within ancient Egyptian mummified animals

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**Other supplementary materials for this manuscript include the following:**

Movies S1 to S9

**Table S1.** Means (and ranges) of measurements of *F. chaus*, *F. sylvestris* and *F. margarita* compared with AB77a. Comparative data from (42, 43).

|  | AB77a | <i>F. chaus nilotica</i> | <i>F. sylvestris libyca</i> | <i>F. margarita</i> | <i>F. catus</i>         |
|--|-------|--------------------------|-----------------------------|---------------------|-------------------------|
| Condylolincisive length (mm)             | 59.26 | 112.8 (98.2-123.9); n=18 | 83.1 (70.8-90.6); n=11      | 77.9 (n=1)          | 79.13 (69.0-91.2); n=60 |
| Alveolar length (C-M <sub>1</sub> ) (mm) | 24.46 | 39.6 (34.9-41.9); n=14   | 26.3 (26.1-31.7); n=12      | -                   | 23.66 (19.8-24.9); n=60 |

**Table S2.** Measured bone dimensions of W531 and reference species. Measurements are reproduced in millimeters. The humerus has been excluded because both humeri were fractured in W531. Where possible, measurements for males and females have been included because of the pronounced sexual dimorphism of raptors (females being larger than males). The specimen W531 was assessed against comparative specimens from the Solti (61) and the web resource by McNall (62).

| Species           | Sex     | Tarsometatarsus (GL) |                  | Tibiotarsus (GL) |                  | Femur (GL) |                  | Cranium (Greatest width) |                  | Ulna (GL) |                  | Radius (GL) |                  | Carpometacarpus (GL) |                  | Source          |
|-------------------|---------|----------------------|------------------|------------------|------------------|------------|------------------|--------------------------|------------------|-----------|------------------|-------------|------------------|----------------------|------------------|-----------------|
|                   |         | n                    | mm               | n                | mm               | n          | mm               | n                        | mm               | n         | mm               | n           | mm               | n                    | mm               |                 |
| <b>W531</b>       | Unknown | n=1                  | 41.48            | n=1              | 60.17            | n=1        | 44.37            | n=1                      | 29.21            | n=1       | 62.69            | n=1         | 58.45            | n=1                  | 36.52            |                 |
| Merlin            | Male    | n=10                 | 34.9-38.4        | n=10             | 52.6-58.9        | n=10       | <b>41.3-45.8</b> | n=10                     | 26.4-27.1        | n=9       | 49.8-52.9        | n=10        | 45.2-51.3        | n=11                 | <b>29.8-38.6</b> | Royal BC Museum |
|                   | Male    | n=17                 | 34.6-37.7        | n=11             | 51.8-55.6        | n=13       | <b>41.9-45.1</b> | n=14                     | 26.0-28.4        | n=16      | 49.3-54.3        | n=16        | 45.3-49.6        | n=17                 | 29.6-33.1        | Solti (1996)    |
|                   | Female  | n=11                 | 36.9-40.1        | n=11             | <b>57.3-61.8</b> | n=11       | 45.6-48.4        | n=9                      | 27.4-29.0        | n=11      | 54.9-60.0        | n=11        | 50.2-55.4        | n=11                 | 32.7-35.6        | Royal BC Museum |
|                   | Female  | n=20                 | 36.6-40.7        | n=6              | <b>56.8-61.2</b> | n=11       | <b>44.4-49.2</b> | n=19                     | 26.8-28.8        | n=21      | 53.8-60.4        | n=21        | 49.3-55.6        | n=21                 | <b>32.6-36.6</b> | Solti (1996)    |
| Lanner Falcon     | Male    |                      | 42.5-55.0        |                  |                  |            |                  |                          |                  |           |                  |             |                  |                      |                  | Solti (1996)    |
| Saker Falcon      | Male    |                      | 52.0-57.0        |                  |                  |            |                  |                          |                  |           |                  |             |                  |                      |                  | Solti (1996)    |
|                   | Female  |                      | 54.0-60.0        |                  |                  |            |                  |                          |                  |           |                  |             |                  |                      |                  | Solti (1996)    |
| Eurasian kestrel  | Male    | n=13                 | <b>37.5-43.7</b> | n=13             | <b>55.7-61.4</b> | n=21       | <b>42.8-47.0</b> | n=14                     | <b>28.5-30.5</b> | n=17      | <b>56.5-64.7</b> | n=17        | <b>52.8-60.5</b> | n=14                 | <b>33.1-37.6</b> | Solti (1996)    |
|                   | Female  | n=23                 | <b>38.4-42.7</b> | n=25             | <b>56.3-63.4</b> | n=26       | <b>41.6-47.6</b> | n=22                     | <b>27.7-31.3</b> | n=25      | <b>59.1-67.0</b> | n=25        | <b>54.6-62.7</b> | n=25                 | <b>33.3-39.3</b> | Solti (1996)    |
| Lesser Kestrel    | Male    | n=2                  | 30.5-32.4        | n=2              | 46.0-50.0        | n=3        | 34.2-36.7        | n=2                      | 23.6-24.8        | n=2       | 55.0-55.5        | n=1         | 51.4             | n=2                  | 31.8-32.0        | Solti (1996)    |
|                   | Female  | n=1                  | 30.4             | n=1              | 47.4             | n=2        | 35.4             | n=1                      | 25               | n=1       | 54.9             | n=1         | 50.3             | n=1                  | 31.7             | Solti (1996)    |
| Hobby             | Male    | n=11                 | 33.0-35.3        | n=16             | 54.2-57.2        | n=16       | <b>40.8-44.9</b> | n=10                     | <b>27.5-29.7</b> | n=11      | <b>57.4-63.5</b> | n=11        | <b>53.6-58.6</b> | n=11                 | <b>34.9-38.5</b> | Solti (1996)    |
|                   | Female  | n=7                  | 35.1-36.0        | n=20             | <b>57.9-60.6</b> | n=21       | <b>43.5-46.8</b> | n=8                      | 29.4-30.4        | n=7       | 63.3-67.5        | n=7         | 58.6-63.0        | n=7                  | 39.0-40.2        | Solti (1996)    |
| Eleanora's falcon | Unknown | n=0                  | no data          | n=1              | 63.4             | n=2        | 47.6-49.0        | n=1                      | 30.3             | n=1       | 76.7             | n=0         | no data          | n=0                  | no data          | Solti (1996)    |
| Red footed falcon | Male    | n=10                 | 27.4-30.7        | n=9              | 46.4-49.7        | n=11       | 35.0-38.4        | n=9                      | 24.8-26.9        | n=10      | 54.6-60.2        | n=10        | 50.6-55.8        | n=10                 | 31.5-34.2        | Solti (1996)    |
|                   | Female  | n=13                 | 27.2-30.9        | n=14             | 45.6-52.0        | n=14       | 35.1-38.9        | n=12                     | 24.2-27.0        | n=14      | 54.5-60.6        | n=13        | 50.5-54.9        | n=14                 | 31.4-34.6        | Solti (1996)    |

**Table S3.** X-ray imaging acquisition parameters

| Specimen                  | X-ray voltage (kV) | X-ray current ( $\mu$ A) | Filtration       | Exposure time (ms) | Projections | Frames per projection | X-ray target material | Voxel size ( $\mu$ m) |
|---------------------------|--------------------|--------------------------|------------------|--------------------|-------------|-----------------------|-----------------------|-----------------------|
| AB77a                     | 55                 | 400                      | none             | 1415               | 3016        | 1                     | Tungsten              | 78.05                 |
| AB77b                     | 55                 | 400                      | none             | 1415               | 3016        | 1                     | Tungsten              | 65.22                 |
| W531                      | 55                 | 400                      | none             | 1415               | 1080        | 1                     | Molybdenum            | 59.04                 |
| EC308 (low magnification) | 60                 | 400                      | 0.25mm Aluminium | 1000               | 1080        | 4                     | Tungsten              | 102.09                |
| EC308 (ROI)               | 85                 | 274                      | none             | 1000               | 3016        | 1                     | Tungsten              | 20.5                  |

**Movie S1 (separate file).** Digital dissection/unwrapping of the cat mummy AB77a head, revealing the skull. DOI: 10.6084/m9.figshare.12328367

**Movie S2 (separate file).** Digitally dissected skull of the mummified cat AB77a. DOI: 10.6084/m9.figshare.12328301

**Movie S3 (separate file).** Segmented mandible of the cat mummy, AB77a. Individual teeth segmented to reveal premolars P3 (green) and P4 (yellow), and the unerupted mandibular molars, M1 (red), within the alveolar crypt. DOI: 10.6084/m9.figshare.12360674

**Movie S4 (separate file).** Digital dissection/unwrapping of the cat mummy body, AB77b. DOI: 10.6084/m9.figshare.12360677

**Movie S5 (separate file).** X-ray microtomography slice video of the cat body, AB77b. DOI: 10.6084/m9.figshare.12360680

**Movie S6 (separate file).** Digital dissection/unwrapping of the bird mummy, W531. DOI: 10.6084/m9.figshare.12360683

**Movie S7 (separate file).** Digital dissection/unwrapping of the bird mummy W531 virtual reality view, W531. DOI: 10.6084/m9.figshare.12411023

**Movie S8 (separate file).** Digital dissection/unwrapping of the whole snake mummy EC308, revealing the coiled snake skeleton at lower resolution. DOI: 10.6084/m9.figshare.12360689

**Movie S9 (separate file).** Region-of-interest X-ray microCT scan, zoomed into the head of the snake, at higher resolution. Objects in the snake's mouth are visible, in addition to widespread skeletal damage, and the calcified kidneys. DOI: 10.6084/m9.figshare.12360695

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