Research and Other Uses of Images and Digitized Specimen Data

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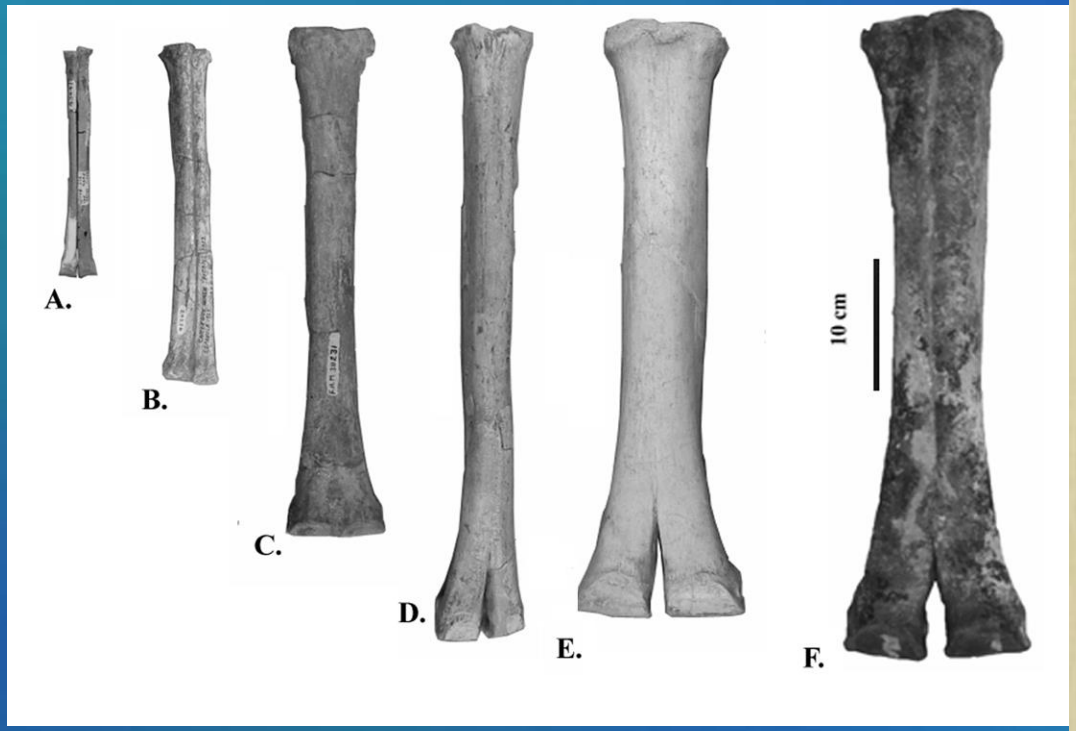
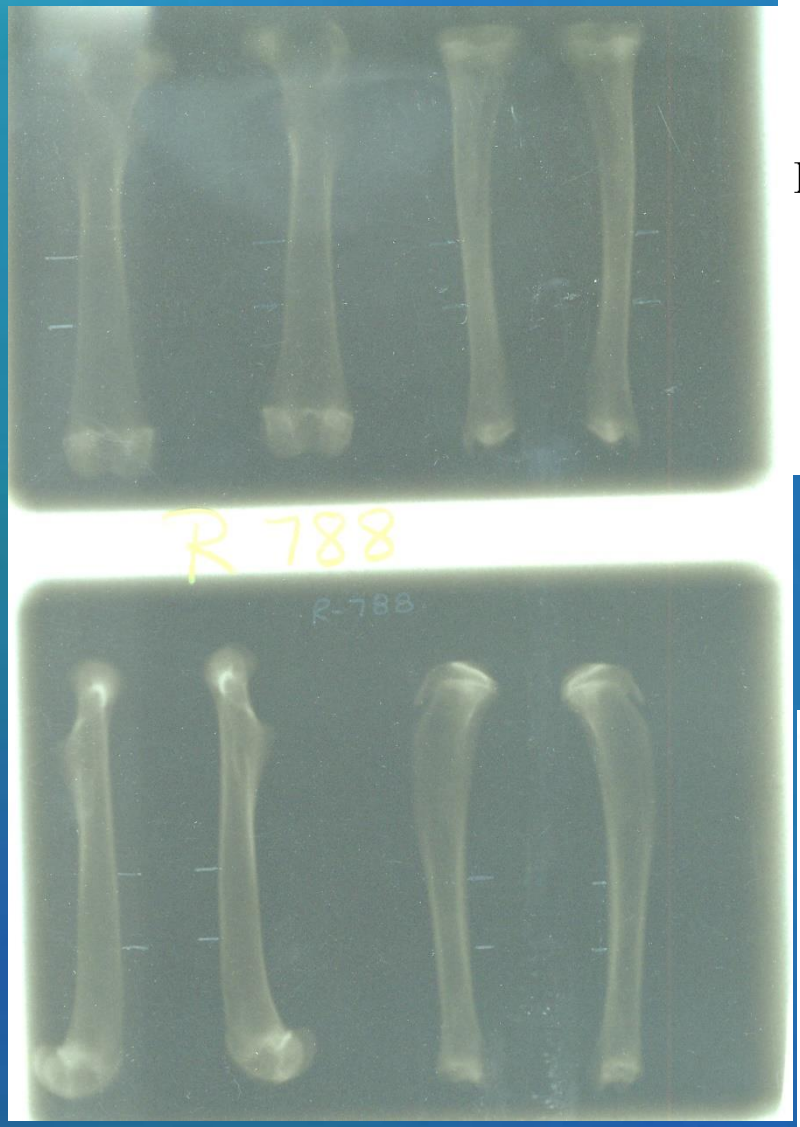
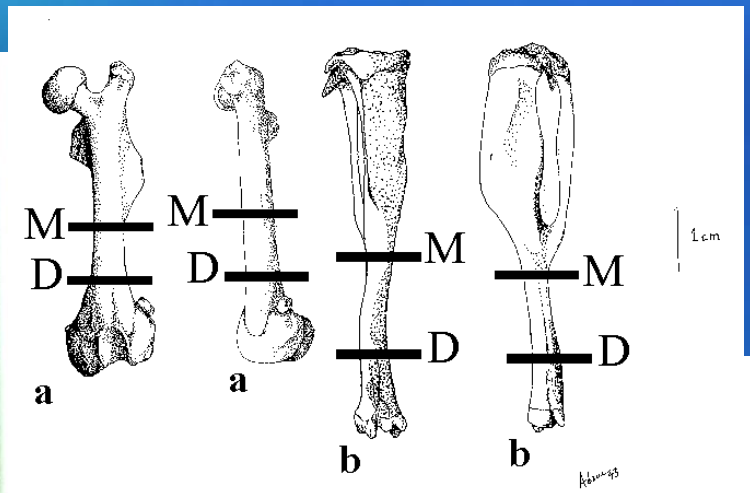
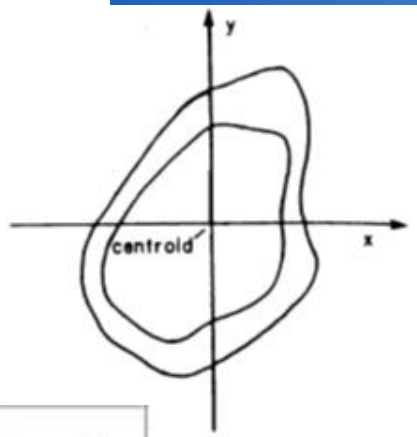
Idaho Museum of Natural History/ISU

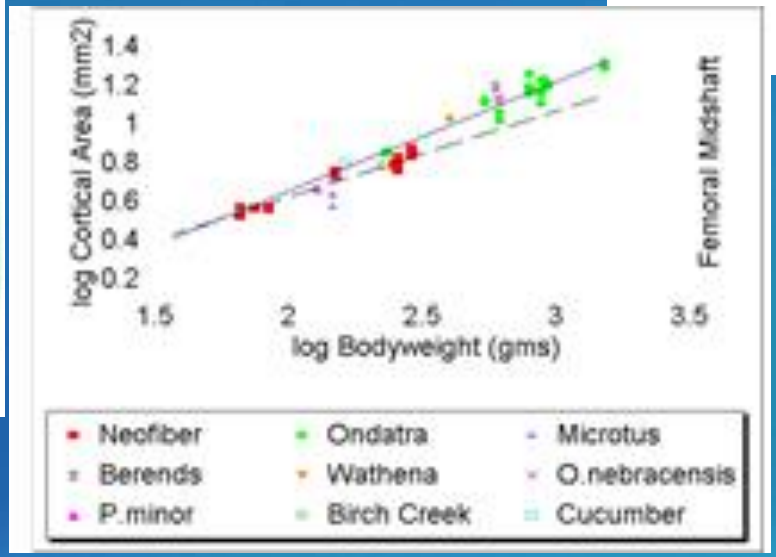
Scientific Illustrations



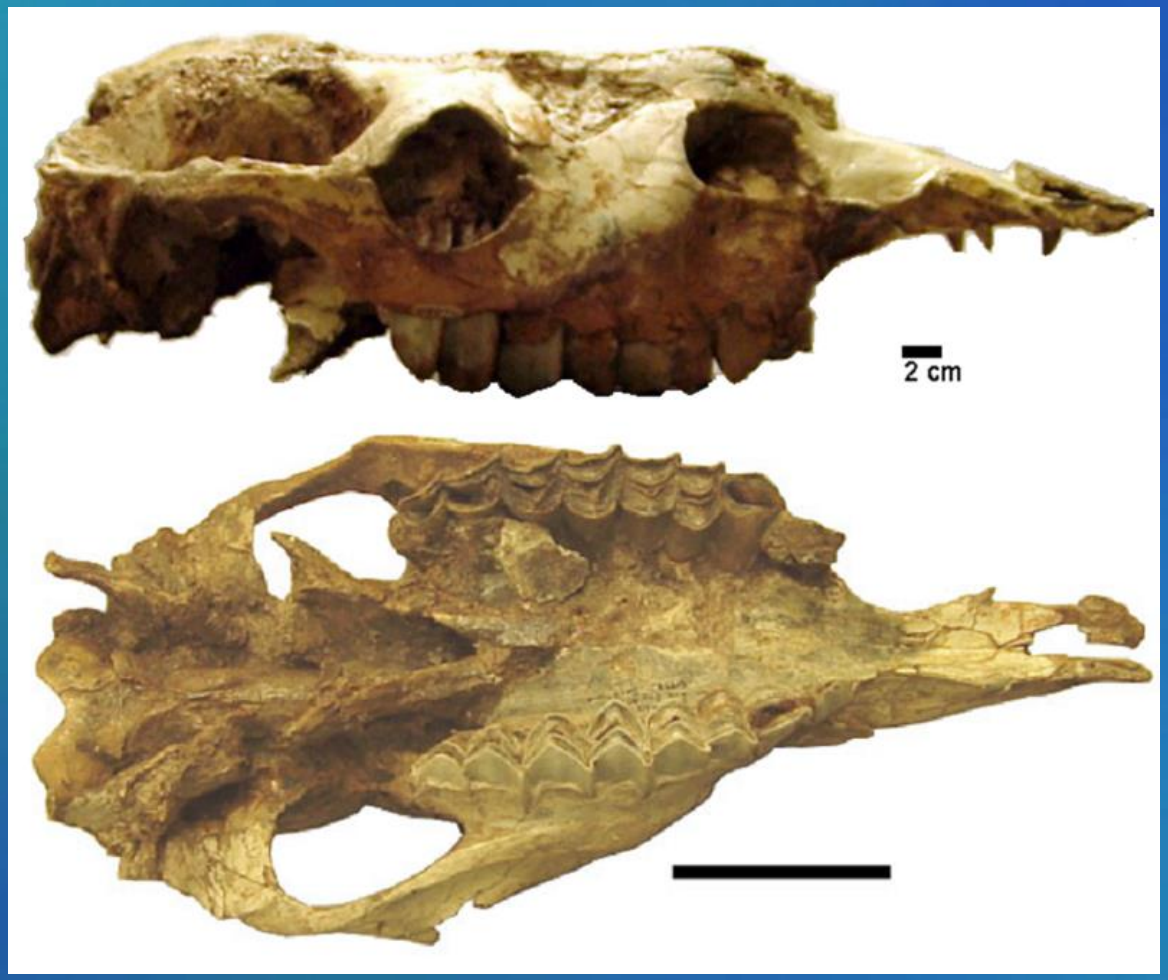

R 788


M
D
a
M
D
a
M
D
b
M
D
b
1 cm


y
centroid
x

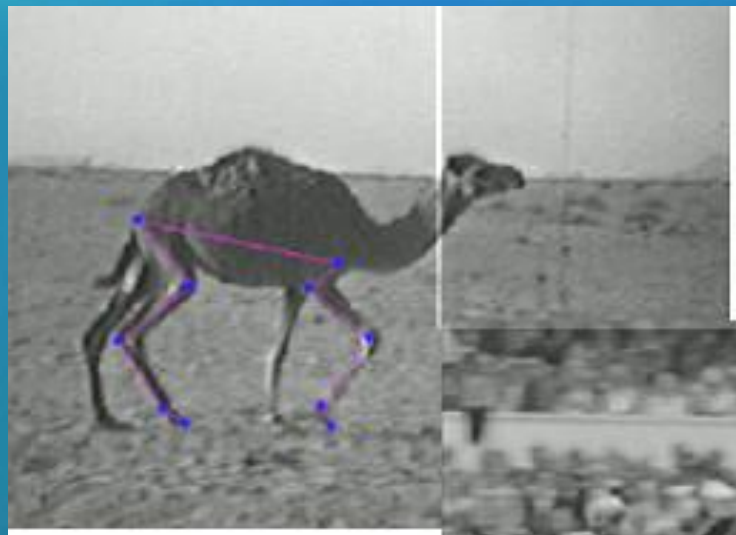

log Cortical Area (mm2)
1.4
1.2
1
0.8
0.6
0.4
0.2
1.5
2
2.5
3
3.5
log Bodyweight (gms)
Femoral Midshaft
Neofiber
Ondatra
Microtus
Berends
Wathena
O.nebracensis
P.minor
Birch Creek
Cucumber

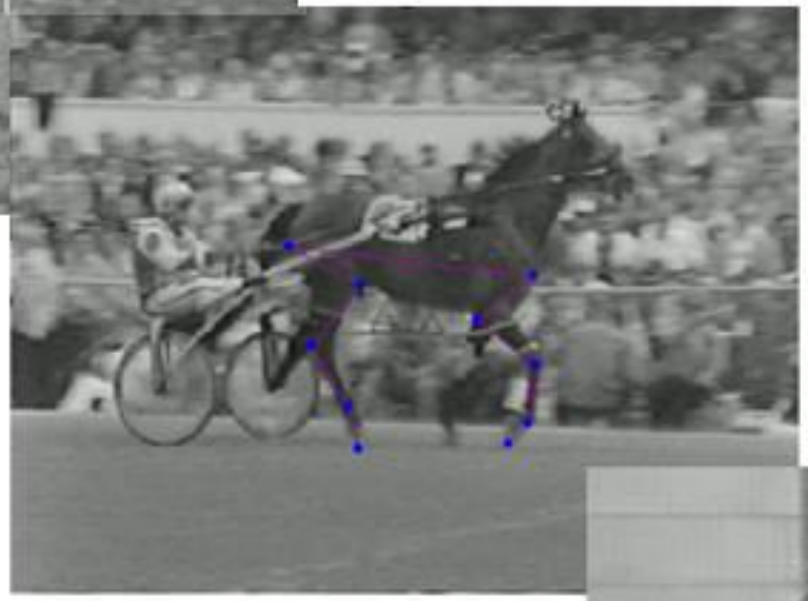
Doctoral Research
Pacing in fossil camels

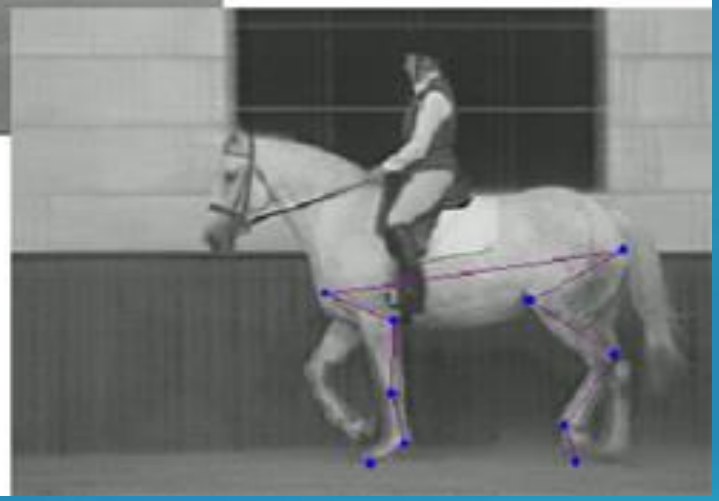

2 cm


10 CM

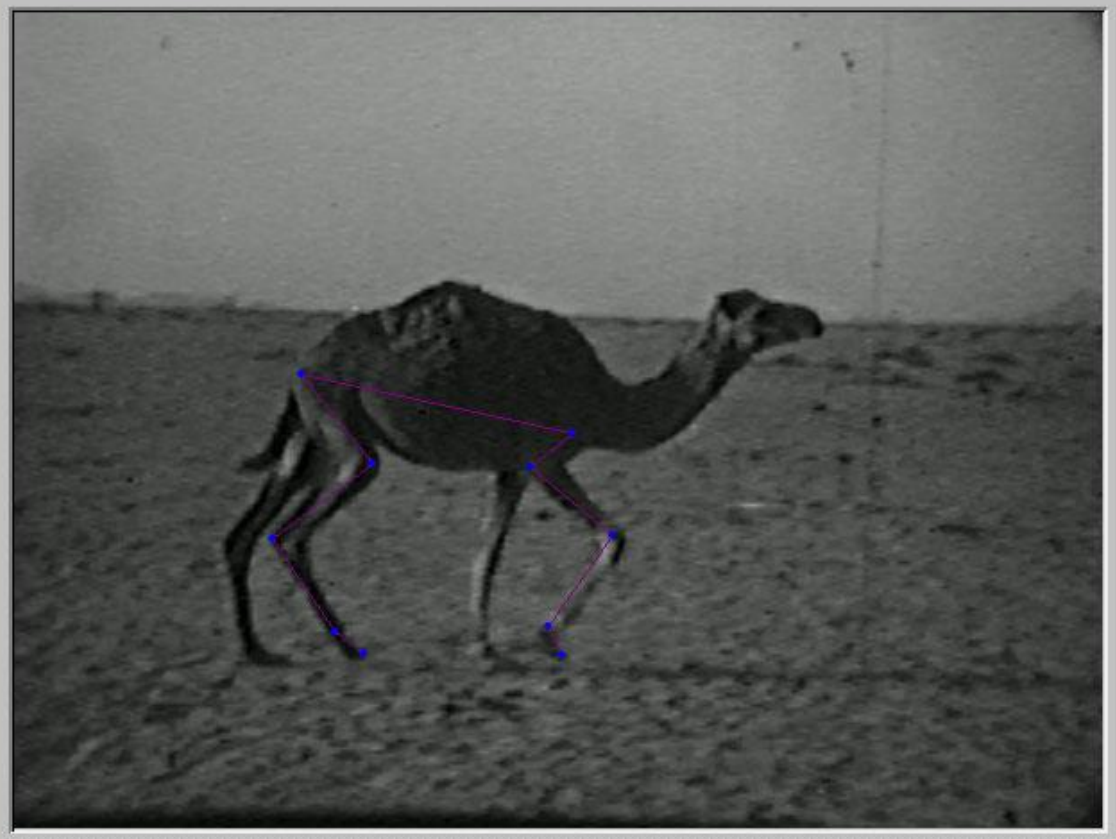
Peak Performance Template







Coordinate Acquisition - Trial6Camel, Camera 1



Digitizing properties

Current point: 1:Shoulder

Type: Moving

Predict algorithm: Semi-Automatic

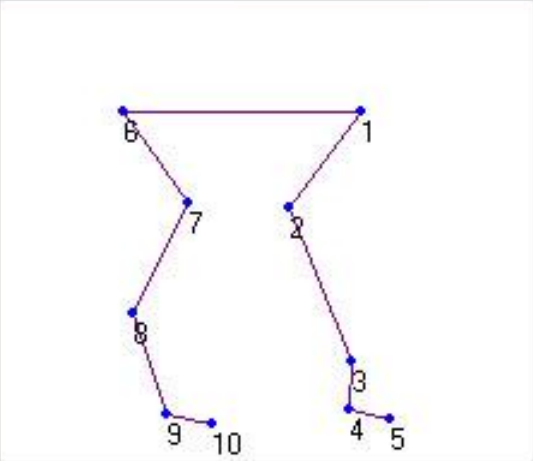
Mode: Manual

Peak Motus - Trial6Camel

File View Tools Window Help

Trial6Camel

Setup | Information | Spatial Model | Event | Calibrate | Acquire | Calculate | Data | Subject Parameters



	Point Label	Virtual	Color	Radius
1	Shoulder			2
2	Elbow			2
3	Wrist			2
4	Forefoot			2
5	Foretoe			2
6	Hip			2
7	Knee			2
8	Ankle			2
9	hindfoot			2
10	Hindtoe			2

New Point

Delete Point

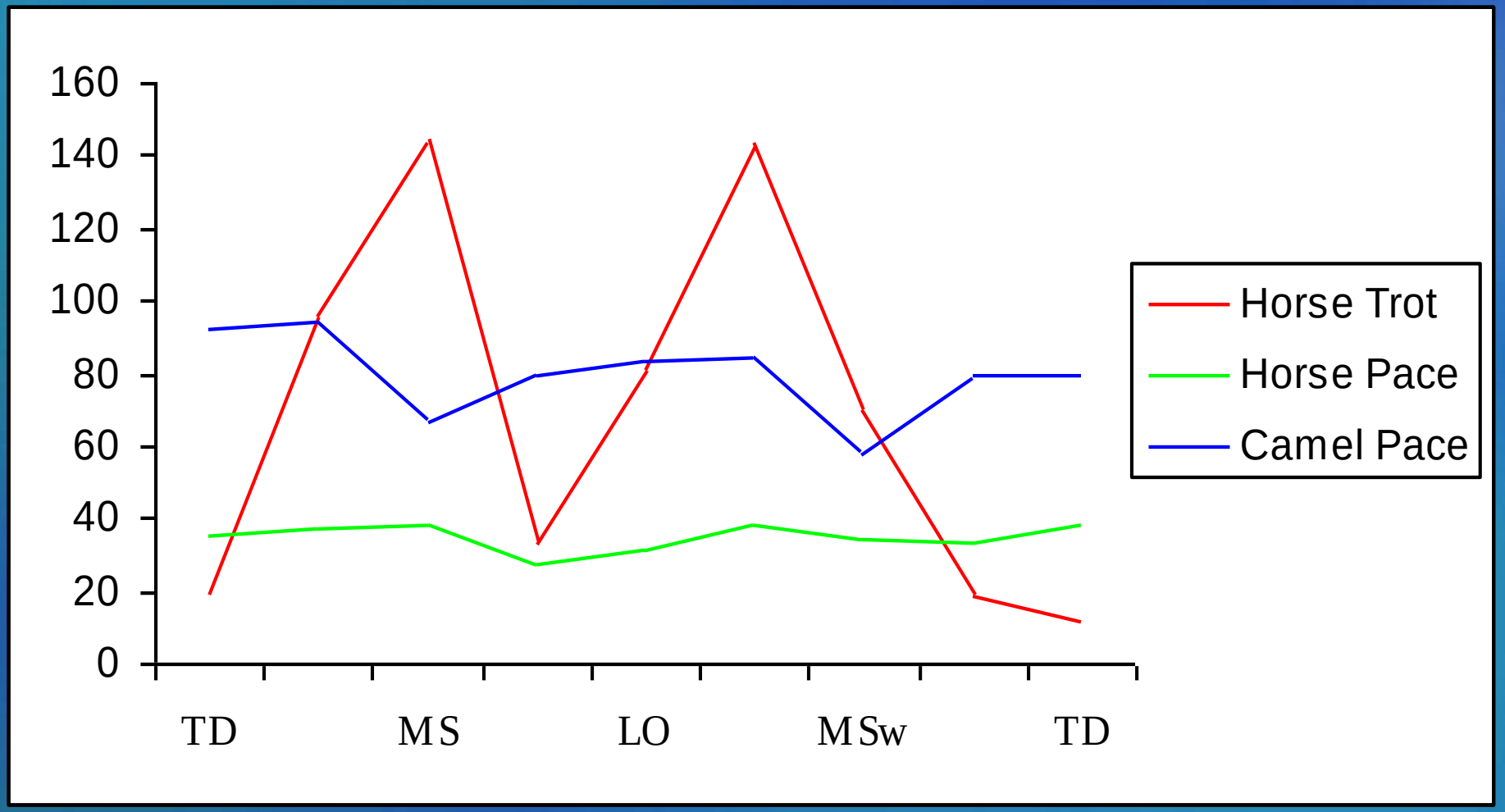
	Segment Label	Point 1	Point 2	Color	Style	Width
1	upper fore leg	1-Shoulder	2-Elbow			1
2	lower fore leg	2-Elbow	3-Wrist			1
3	Wrist	3-Wrist	4-Forefoot			1
4	Front foot	4-Forefoot	5-Foretoe			1
5	upper hind leg	6-Hip	7-Knee			1
6	lower hind leg	7-Knee	8-Ankle			1
7	Ankle	8-Ankle	9-hindfoot			1

New Segment

Delete Segment

Center of Mass... Unit Vectors... Virtual Points... Angles...

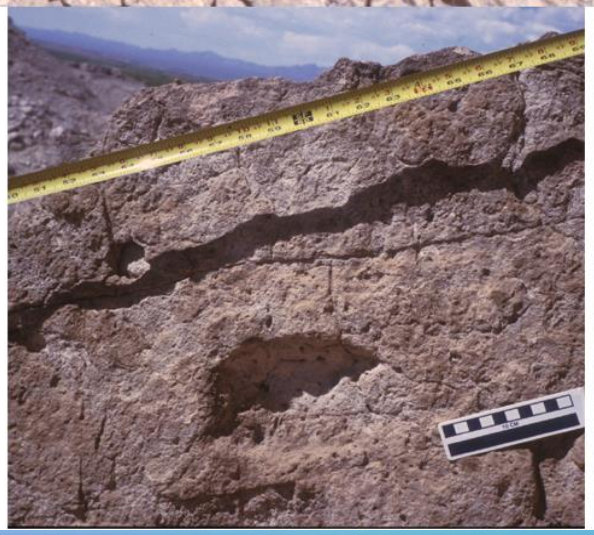
For Help, press F1


160
140
120
100
80
60
40
20
0
TD
MS
LO
MSw
TD
Horse Trot
Horse Pace
Camel Pace

Tracks and Trackways

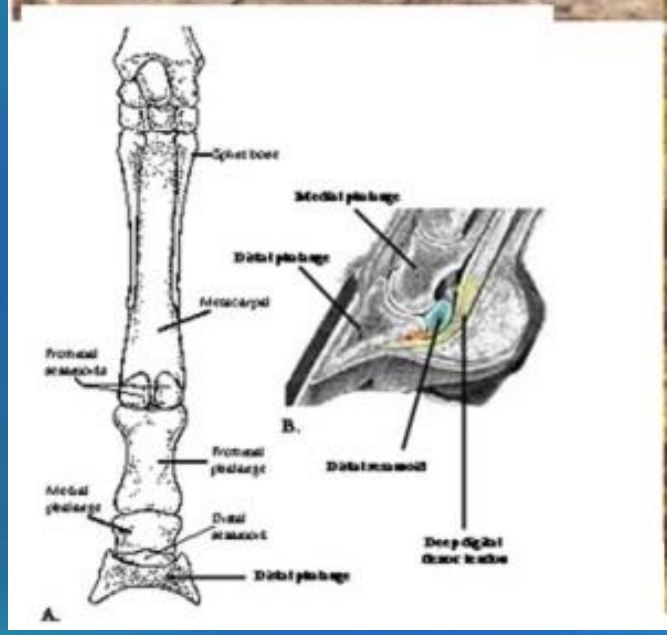

J


J




H

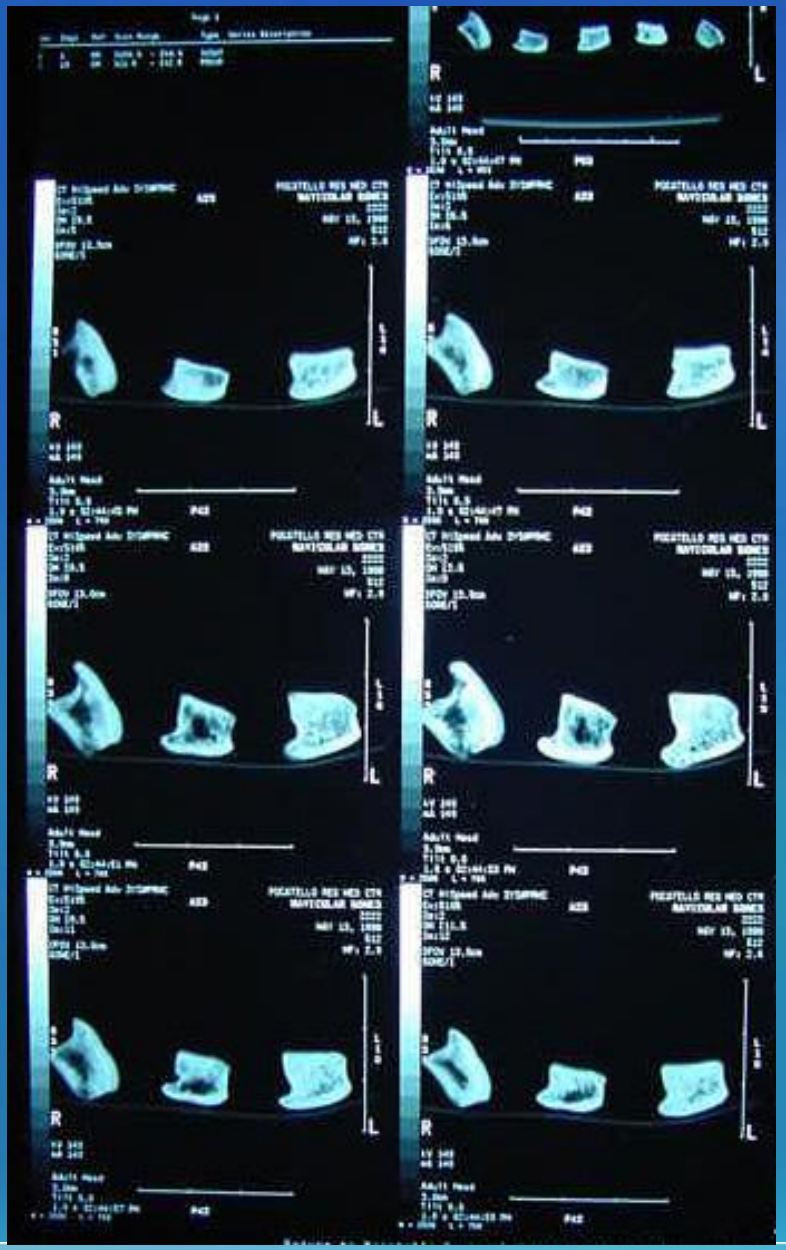
Paleopathology - ENS

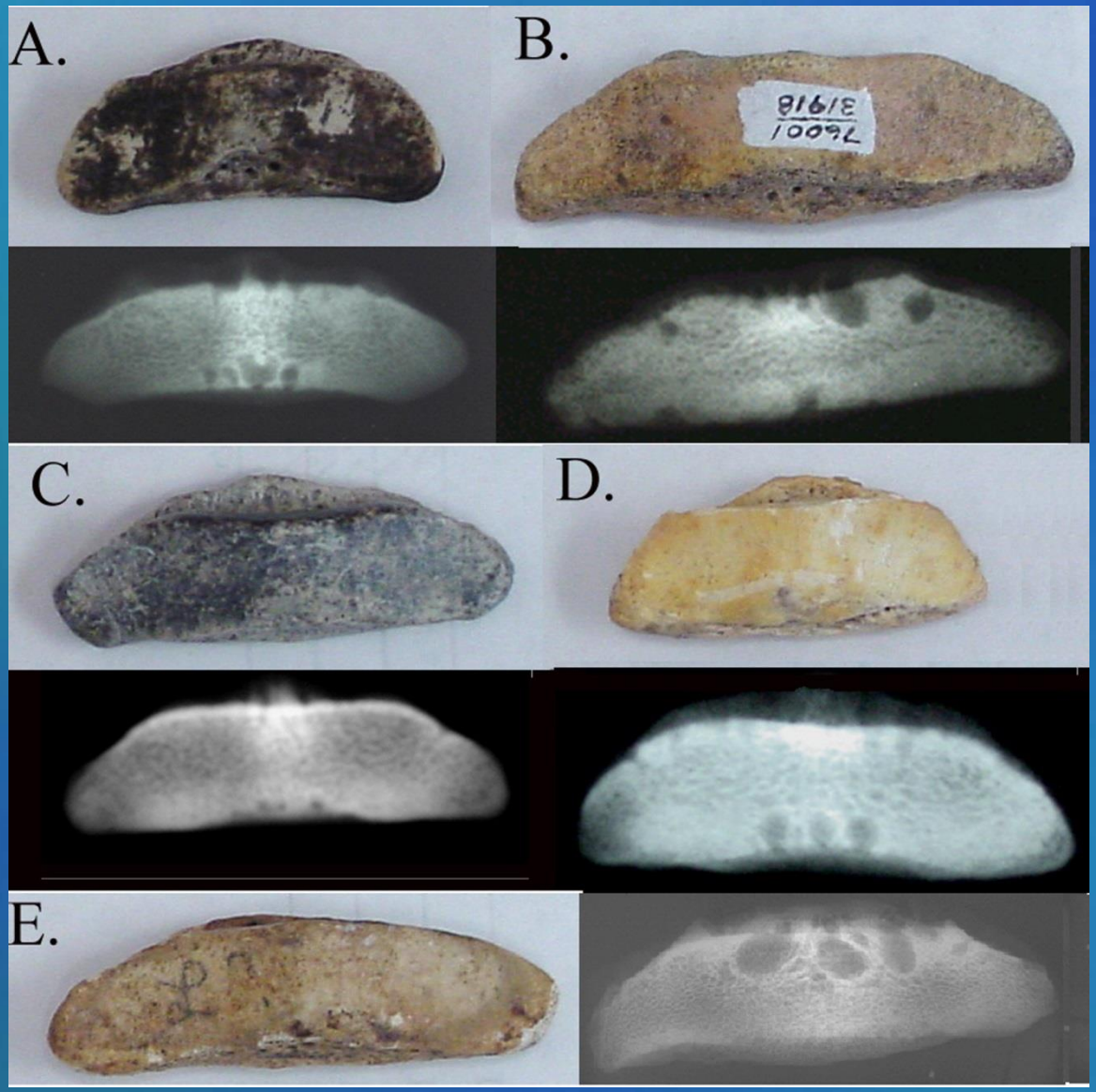


Methods

Radiographs

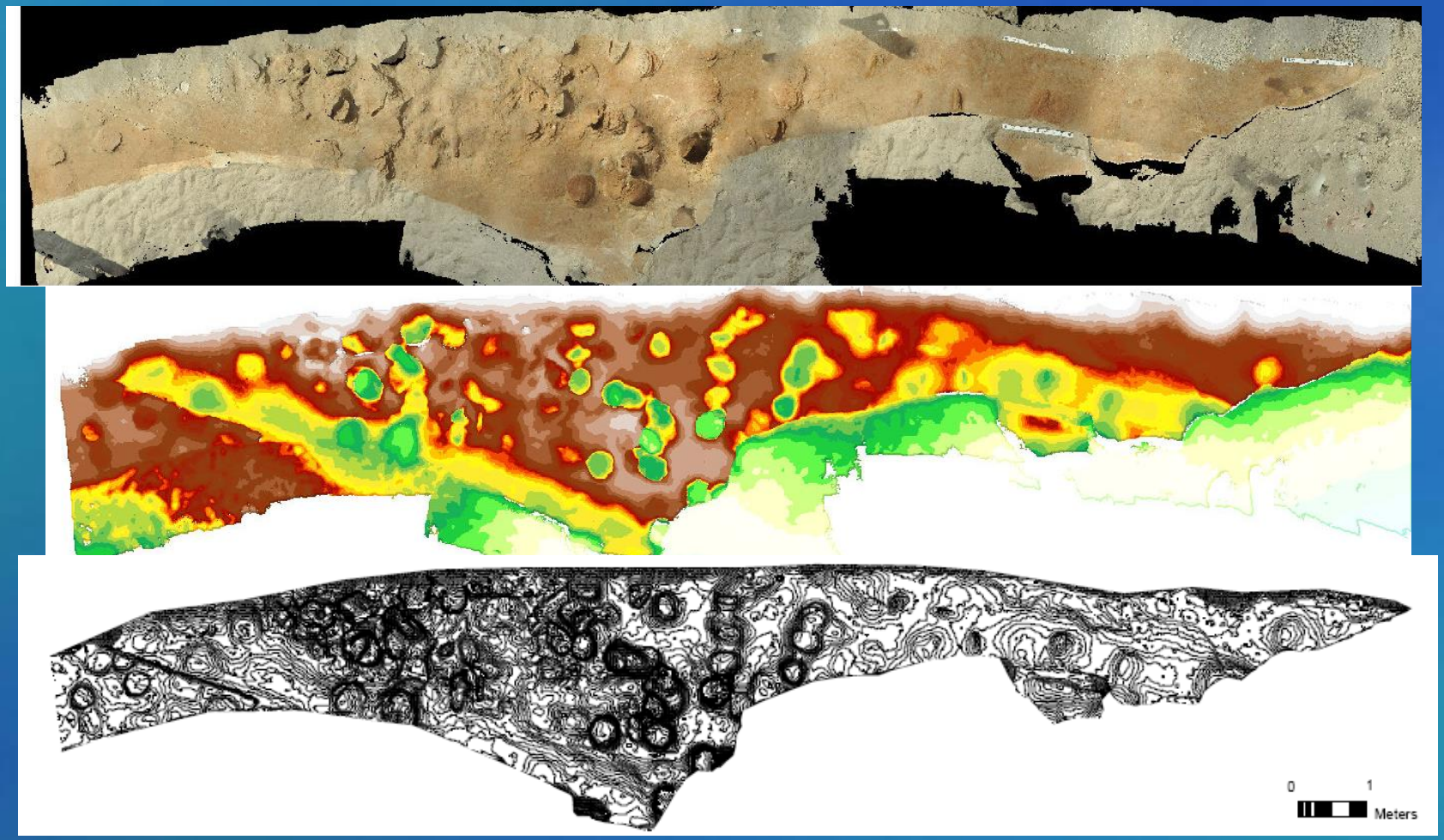
CT Scans





A. *Equus occidentalis*
La Brea Tar Pits
B. *Equus scotti*
American Falls
C. *Equus simplicidens*
Hagerman
D. *Equus conversidens*
San Josecito Cave
E. *Equus caballus*
modern horse

Photogrammetry



Preliminary Photogrammetic Data

Manually Calibrate the Size of Pixels

Manually Calibrate The Pixel Size

1) Click on the beginning of an object of known length visible in the image.

2) Drag to the end of the scale. Release the mouse.

TIP: Draw along as much of the scale as possible. The longer the line, the more precise the measurement.

A colored line is drawn on the image. If the line does not match the scale, either redraw the line or fine tune the start and stop positions of the line with the small arrows next to the x and y positons of the line end points, which are located below the image.

3) When satisfied with the fit of the line to the scale, enter the length of the scale used in the labeled white box below.

4) Enter two letters that represent the unit of the scale being used in the labeled white box below. For example, type "in" for inches and "cm" for centimeters.

5) Click 'Done' when finished. To re-run the calibration method click 'Calibrate Length' in the File menu.

To cancel, close this window by right-clicking the 'close' icon in the upper left corner.

When zoomed in, pan around the image by right-clicking and dragging the image. Because of the text fields, the keyboard cannot be used to zoom and pan the image.

Untitled

X	Y
296	421
296	311

Zoom out Magnification: 100% Zoom in

Length of Drawn Line

Unit of Length

Cancel Done

File Navigation Measurements Utilities Preferences Save Color Masks Help

Spatial tools measure the color and size of features in digital images.

Select Version of Image to View and Analyze

(•) Original ( ) Enhanced ( ) Masked

Line Tool

Select a spatial analysis tool above.

(•) RGB ( ) HSV

Select color of tool

Hide Tool

Erase Tool

Pixel Position	X	Y
Adjust	25	74
	552	75

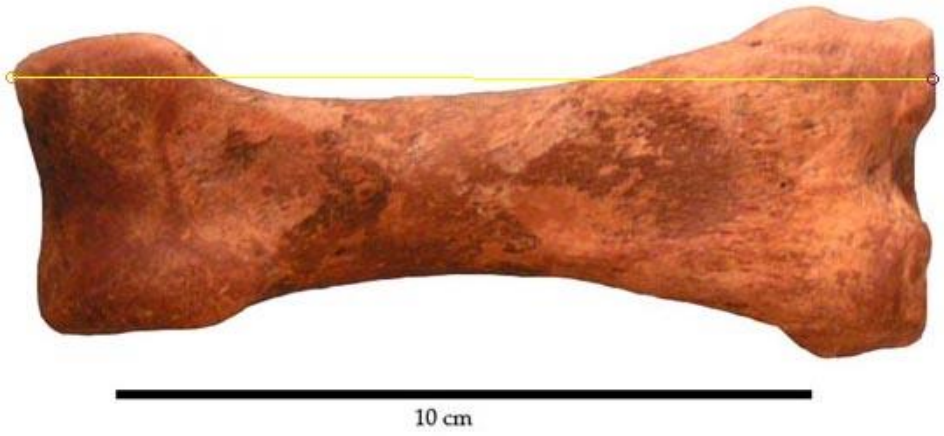
Number of Pixels 527

Length: 13.27 cm

Color	Intensity [%]
Red (%)	86.67
Green (%)	65.88
Blue (%)	56.86
Average Color	69.8

Intensities of colors range from 0%, meaning none of the color is present, to 100%, when maximum color is present.

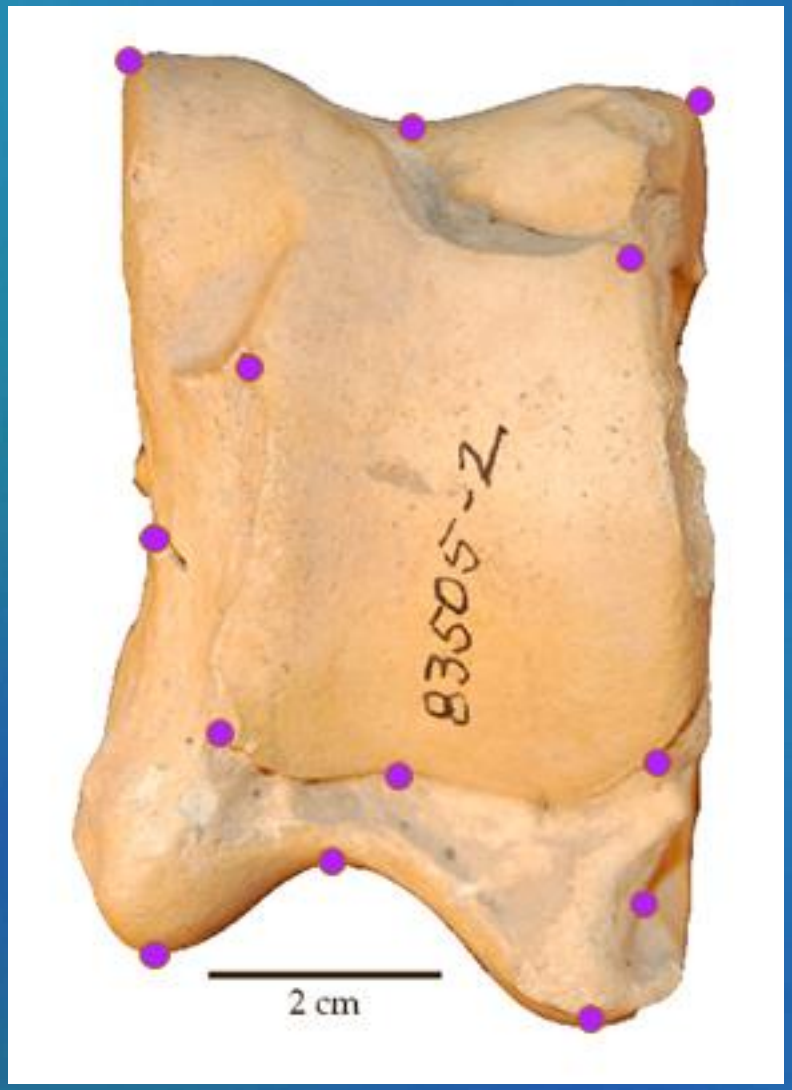
Spatial Analysis | Enhance Colors | Mask Colors | Time Series

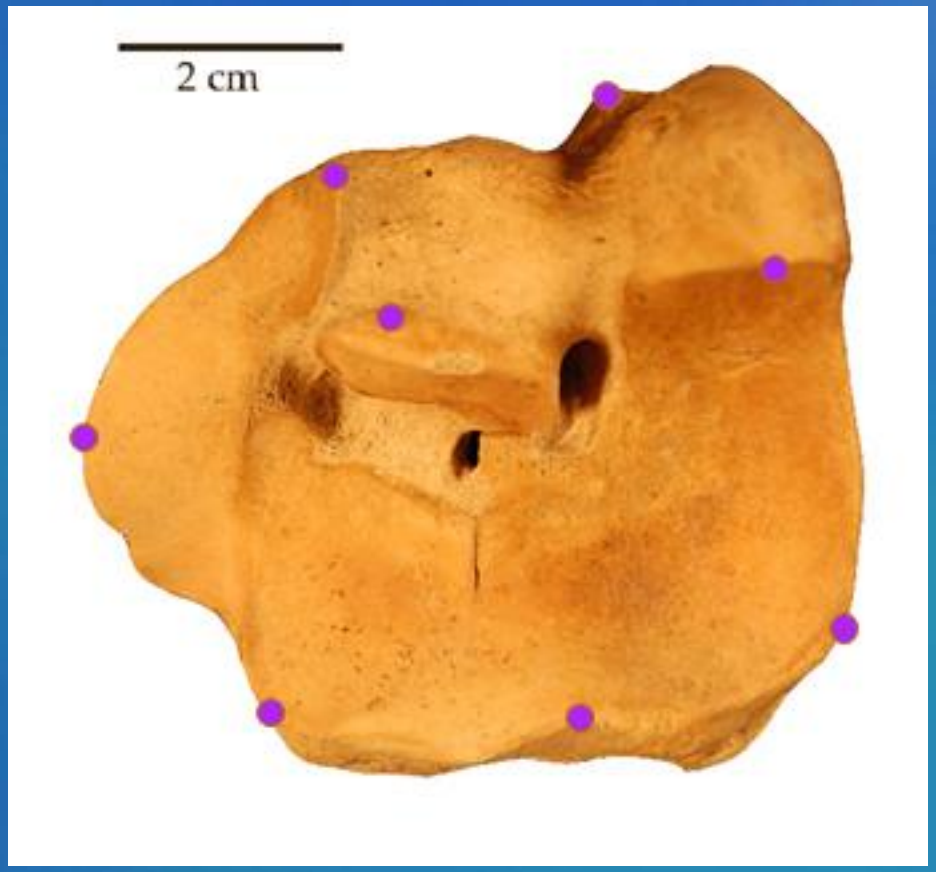


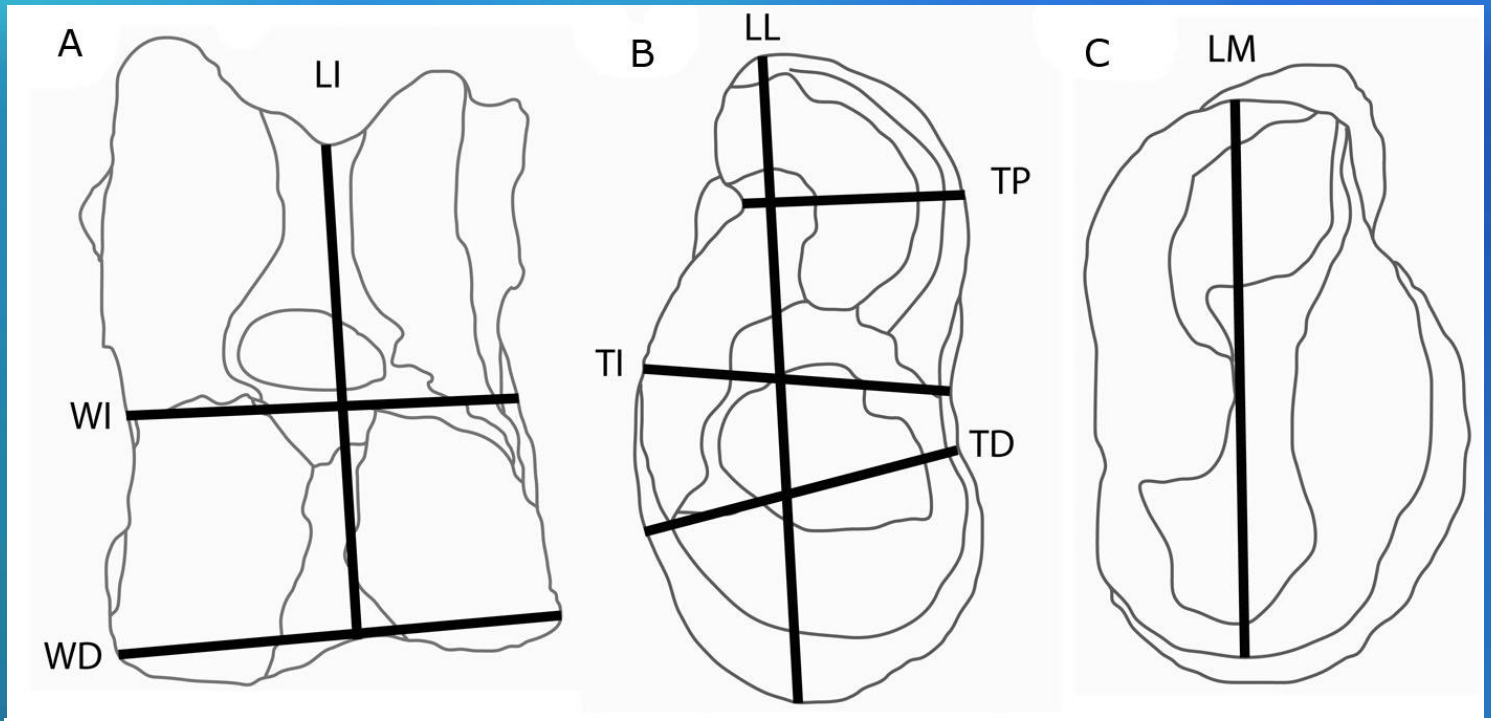
PIC 12 Lamine prox phal post reduced.jpg is 600 by 312 pixels

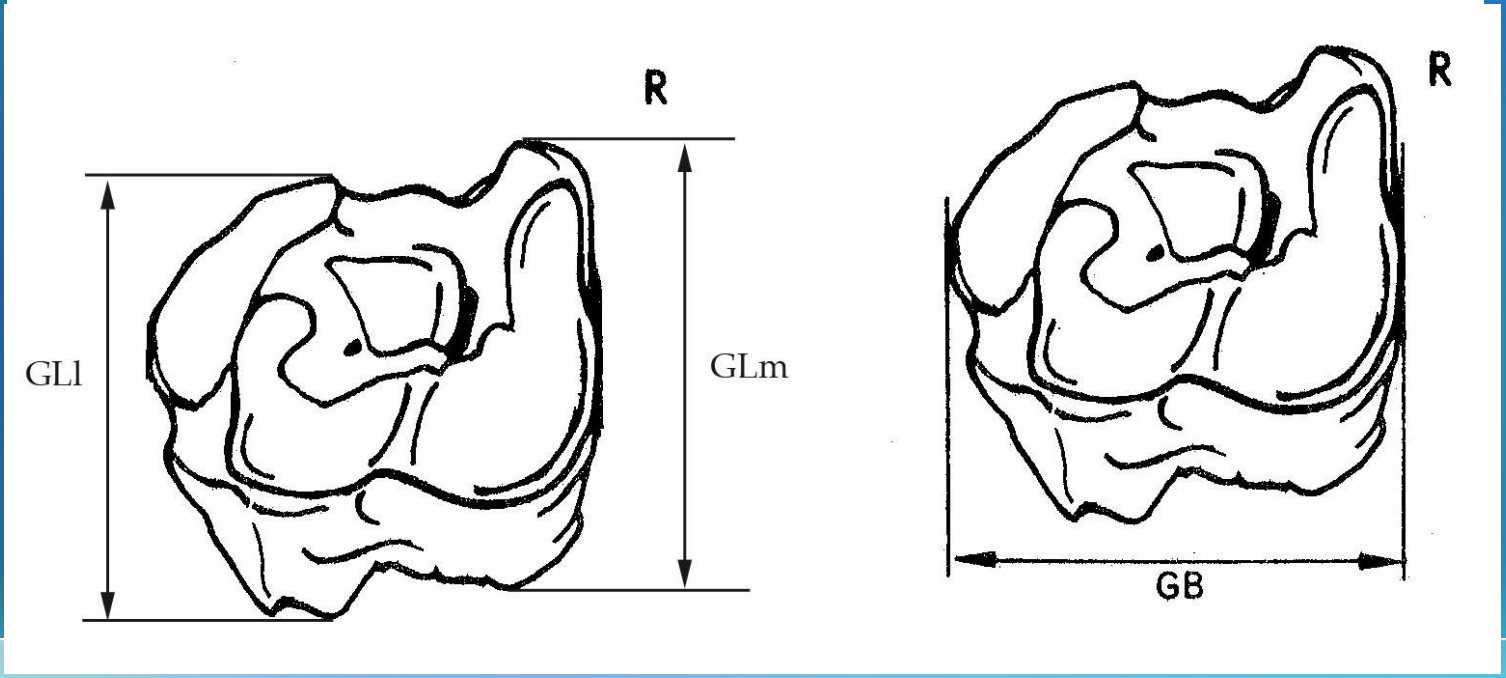
Zoom out Magnification: 100% Zoom in

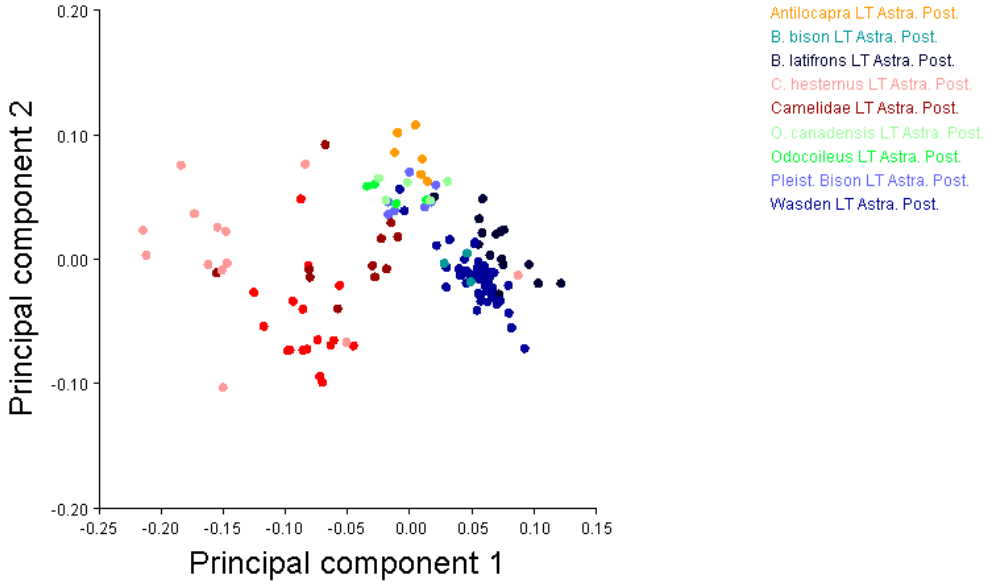
Landmark Analysis

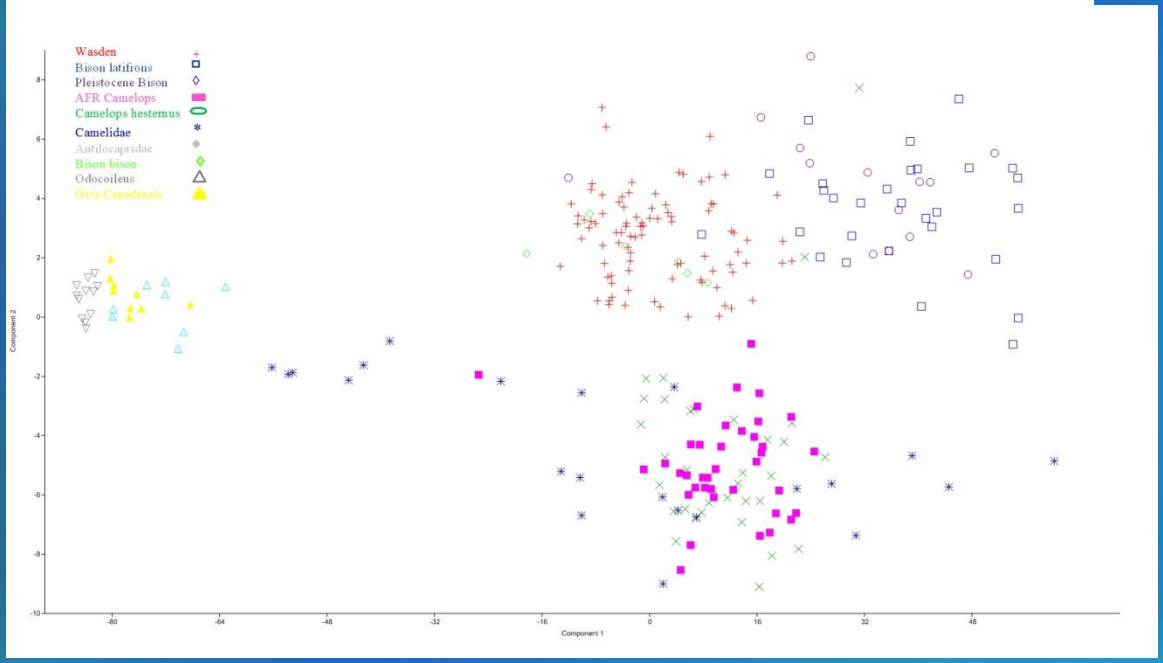





A
LI
WI
WD
B
LL
TP
TI
TD
C
LM

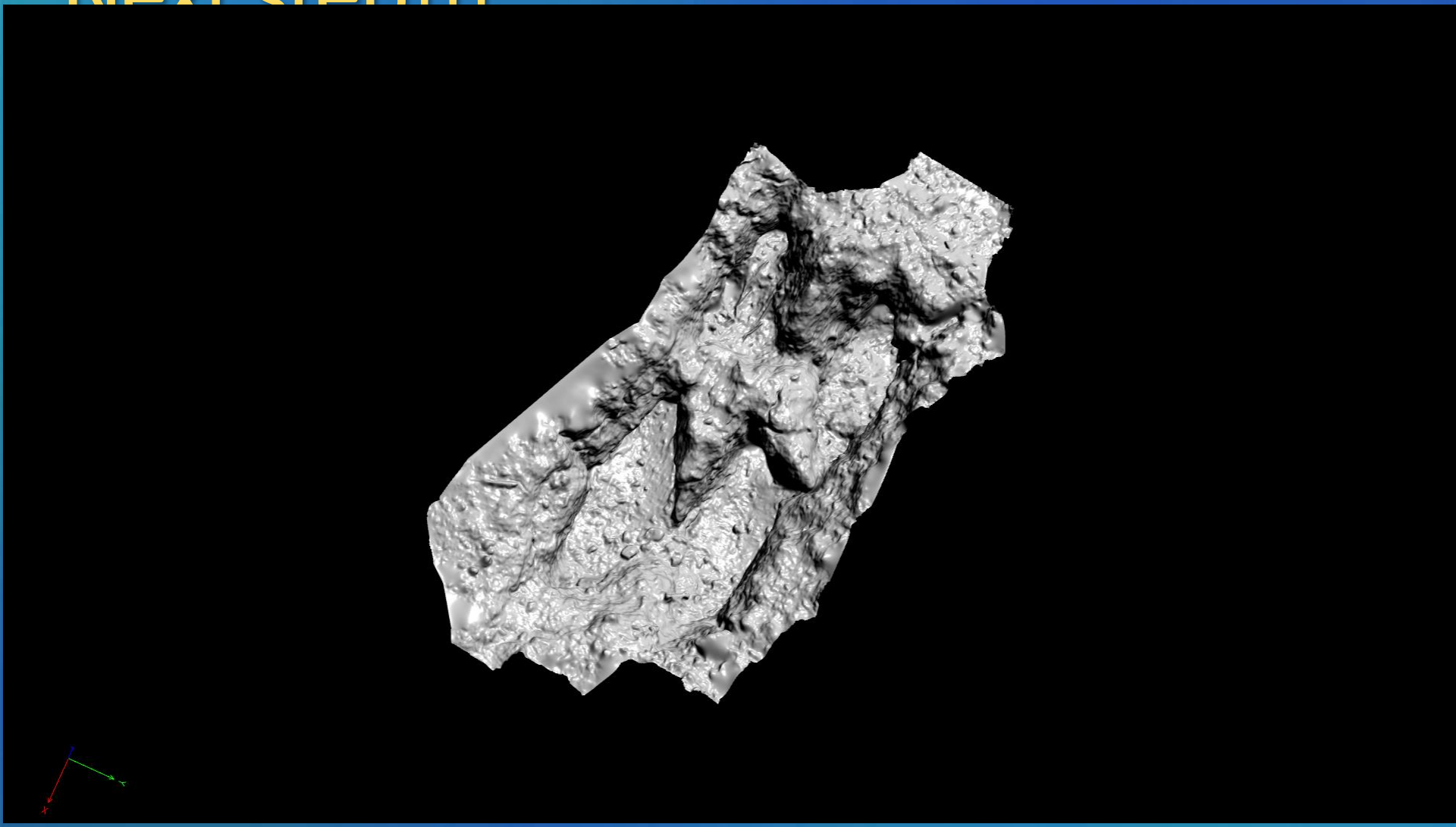

R
GLl
GLm
R
GB

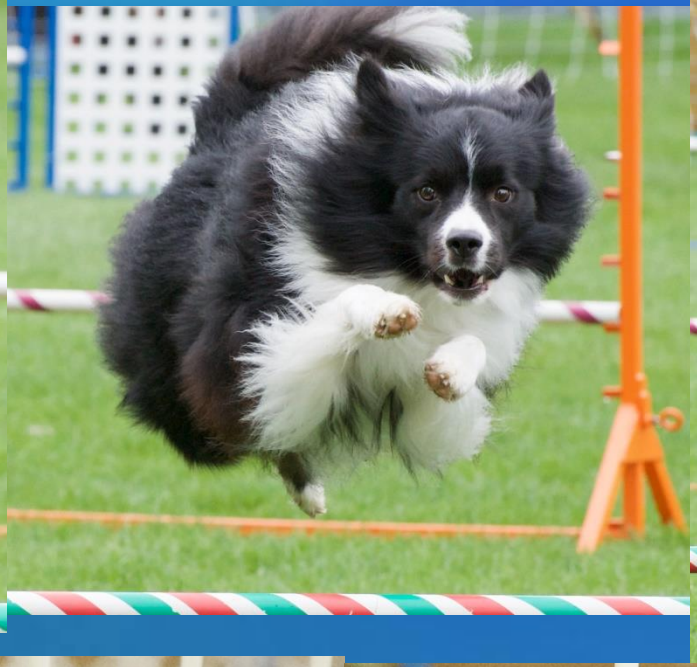

AFR Camelops LT Astra. Post.
Antilocapra LT Astra. Post.
B. bison LT Astra. Post.
B. latifrons LT Astra. Post.
C. hesternus LT Astra. Post.
Camelidae LT Astra. Post.
O. canadensis LT Astra. Post.
Odocoileus LT Astra. Post.
Pleist. Bison LT Astra. Post.
Wasden LT Astra. Post.
Principal component 2
0.20
0.10
0.00
-0.10
-0.20
-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
Principal component 1

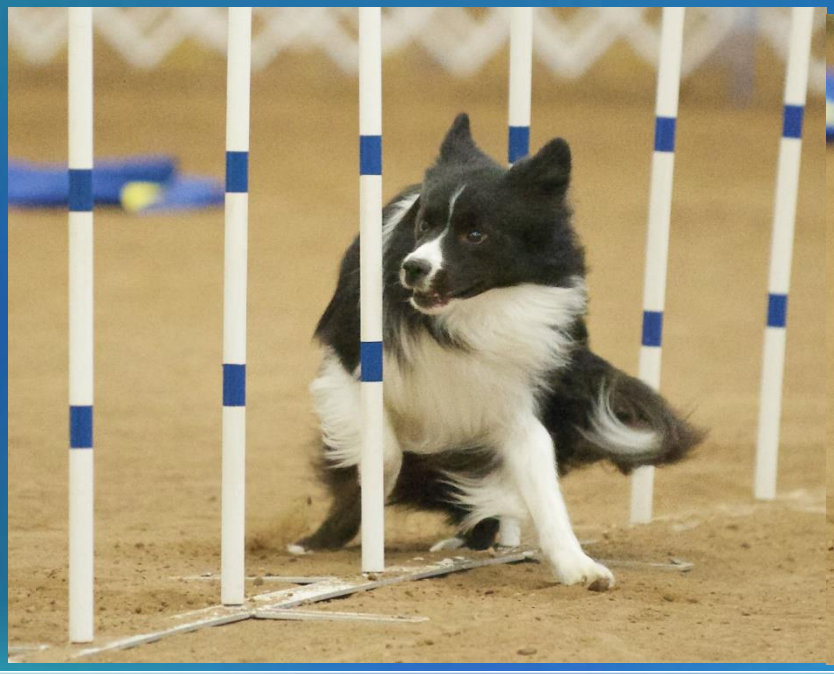
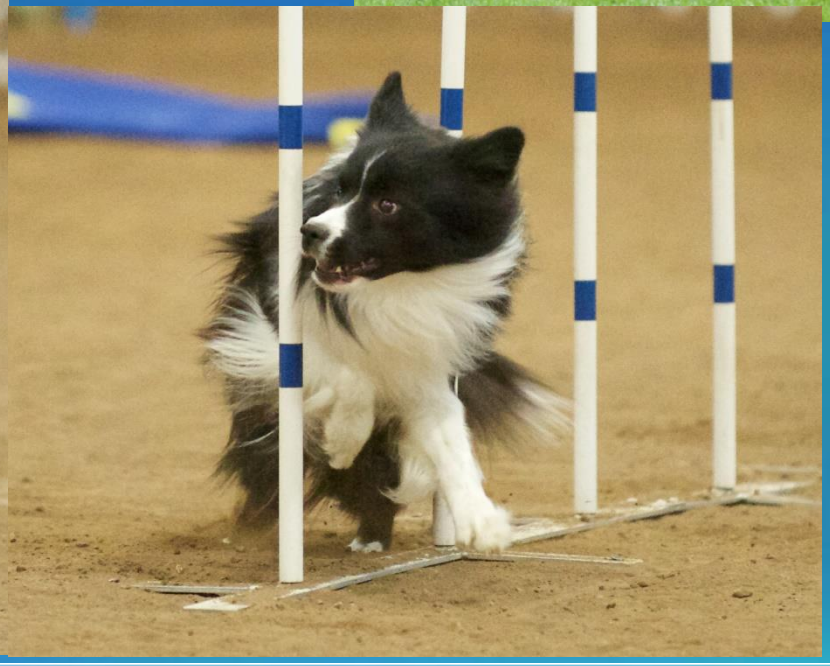

Wasden
Bison latifrons
Pleistocene Bison
AFR Camelops
Camelops hesternus
Camelidae
Antilocapridae
Bison bison
Odocoileus
Ovis Canadensis
Component 2
Component 1

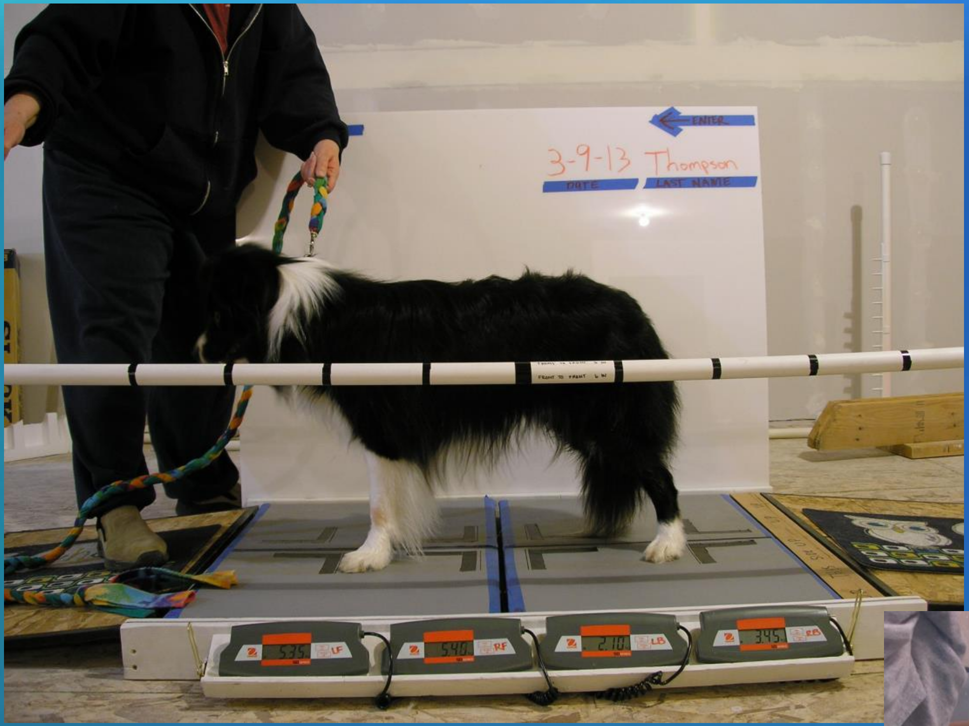

0cm
5
10
0cm
5
10

Next step!!!




ENTER
3-9-13
DATE
Thompson
LAST NAME
53.5
LF
54.0
RF
21.0
LB
34.5
RB