

HOW COULD WE BE SURE ABOUT THE AUTHENTICITY OF THIS CHESS PIECE ?

CAN WE USE MICRO-ANALYSIS ON AN OBJECT MADE OF ROCK CRYSTAL?

UNLUCKY, ROCK CRYSTAL IS TOO RESISTANT TO WEATHERING...

WE WOULDN'T GET INFORMATION RELEVANT ENOUGH TO CONCLUDE ON ITS STATE OF DETERIORATION...

I SHALL PROPOSE YOU INSTEAD TO USE A NON-INVASIVE TECHNIQUE WHICH ALLOWS TO EVALUATE THE ANTIQUITY OF THE OBJECT'S CARVING: "ERDA"

ERDA ? IS THIS TECHNIQUE REALLY EFFICIENT?

OF COURSE! IT WAS USED TO PROVE THE MODERNITY OF THE CRYSTAL SKULL

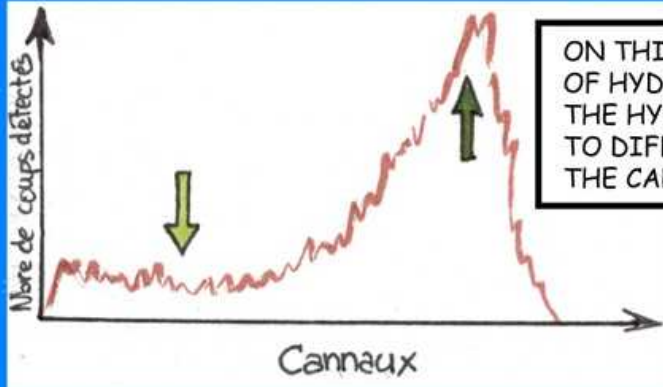
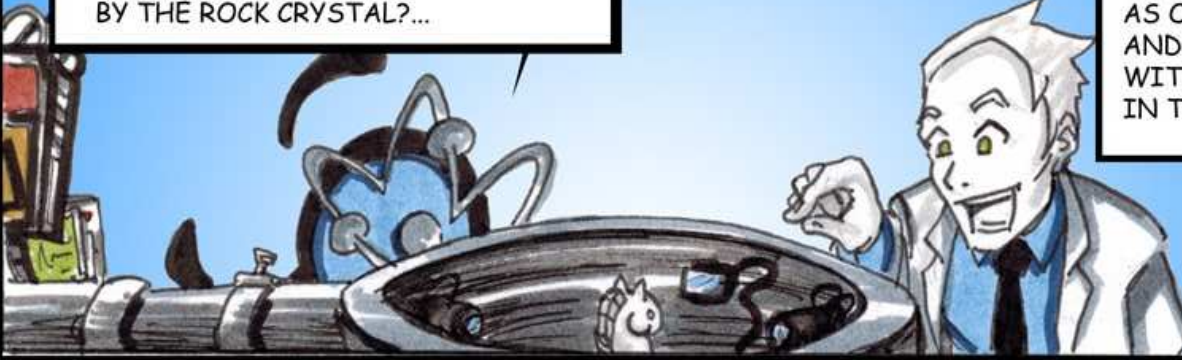
HOW DOES IT WORK?

WELL, WE TAKE A LOOK AT THE HYDRATION OF THE ROCK CRYSTAL'S SURFACE...

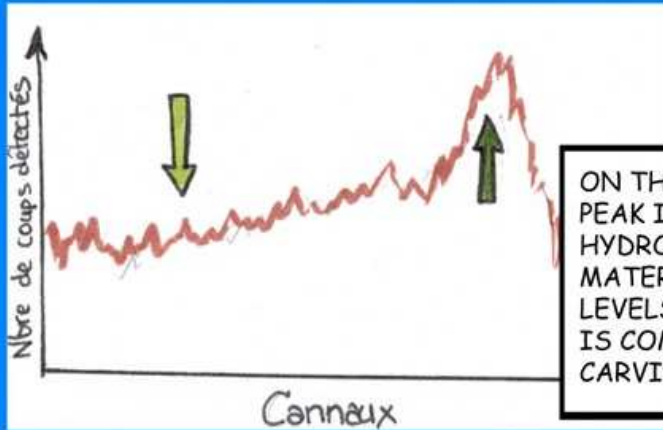
MORE PRECISELY WE STUDY WATER ADSORBED AT A MOLECULAR LEVEL, A NATURAL PHENOMENON WHICH DEVELOPS ITSELF OVER LONG PERIODES AND CANNOT BE ARTIFICIALLY REPRODUCED...

BUT HOW CAN WE DETERMINE THE AMOUNT OF WATER ADSORBED BY THE ROCK CRYSTAL?...

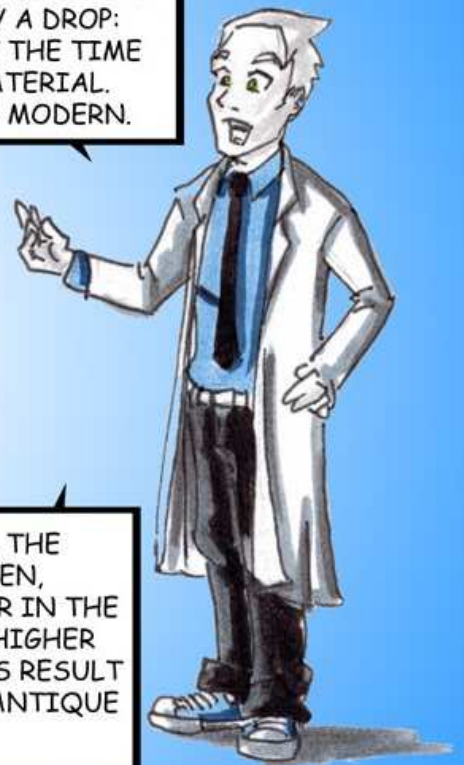
WE MEASURE THE HYDROGEN, INTRODUCED AS OH AT THE SURFACE AND DEEPER, TOGETHER WITH ITS DIFFUSION IN THE MATERIAL...



ON THIS PROFILE, WE OBSERVE A PEAK OF HYDROGEN FOLLOWED BY A DROP: THE HYDROGEN HASN'T GOT THE TIME TO DIFFUSE INSIDE THE MATERIAL. THE CARVING IS CERTAINLY MODERN.



ON THIS SECOND PROFILE, THE PEAK IS THE SAME, BUT THEN, HYDROGEN DIFFUSE DEEPER IN THE MATERIAL, AS SHOWN BY HIGHER LEVELS IN THE CURVE. THIS RESULT IS COMPATIBLE WITH AN ANTIQUE CARVING OF THE OBJECT.



THE INFORMATION WE GAIN IS NO DATATION, AS WE CANNOT KNOW THE SPEED AT WHICH WATER DIFFUSES IN THE CRYSTAL, AS THIS PHENOMENON IS TIED TO PRESERVATION'S CONDITIONS.

HOWEVER, THE NATURE OF THIS INFORMATION AND THE NON-INVASIVE CHARACTERISTIC OF THE ANALYSIS MAKE ERDA THE MOST SUITABLE TECHNIQUE TO EVALUATE THE ANTIQUITY OF ROCK CRYSTAL'S CARVING!!

