# Draining The Oceans

Exploring hidden depths. 422 employs new techniques and cutting edge tools
to bring the ocean floor to life.

422 has a history of not shying away from large, ambitious projects. Draining the Oceans has to rank amongst one of the most challenging yet.

We had a tight tight deadline of 130 shots in 3 months, including many huge landscapes with exacting geographic and geological specifications. Minimal amounts of available data and reference exist, and almost all of the landscapes and features would have to be built from scratch.

Many of these landscapes are simply immense, and exist on a scale way beyond what we are accustomed to seeing on dry land. Portraying this vast sense of scale while not sacrificing the wealth of detail within these environments was not going to be easy.

The moment the project was given the go ahead, an intense period of 2d concept and 3d R+D began.
Art Director and concept artist Eduardo Schall led the 2d department and worked carefully with the shows producers and directors in order to flesh out how we would approach the show, and create a visual language that would work throughout.
This helped us to quickly establish how we were going to portray the sense of scale as elegantly as possible while allowing the directors enough freedom to tell their story. The initial concepts were vitally important on many levels, there being no other visual reference for these alien worlds. So the 2d quickly helped everyone understand where we were heading in terms of re interpreting the scientific data, which was our main reference on which to build the landscapes. This work, coupled with early 3d tests gave our clients the confidence needed to quickly evolve from the concept stage to full production.
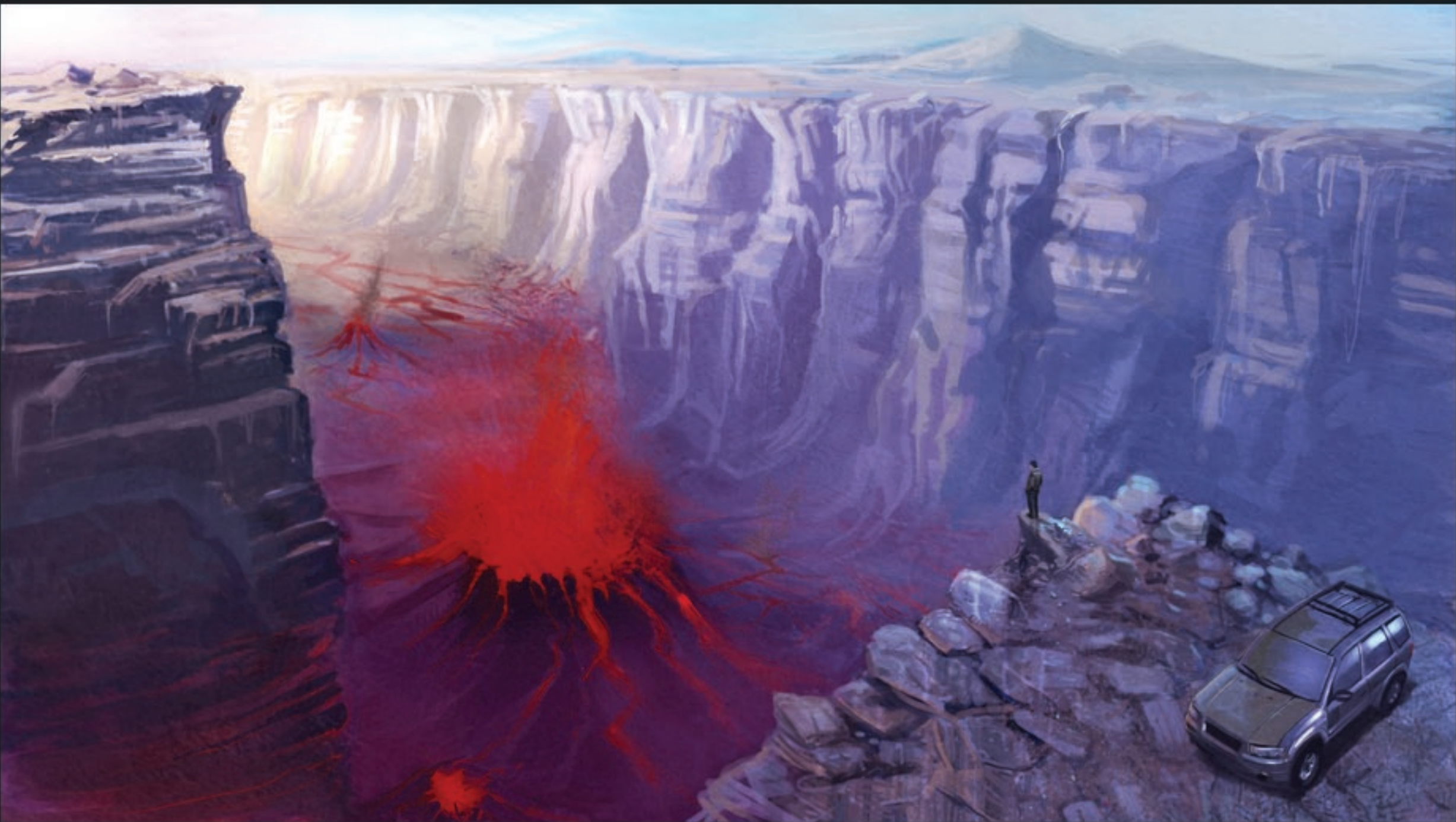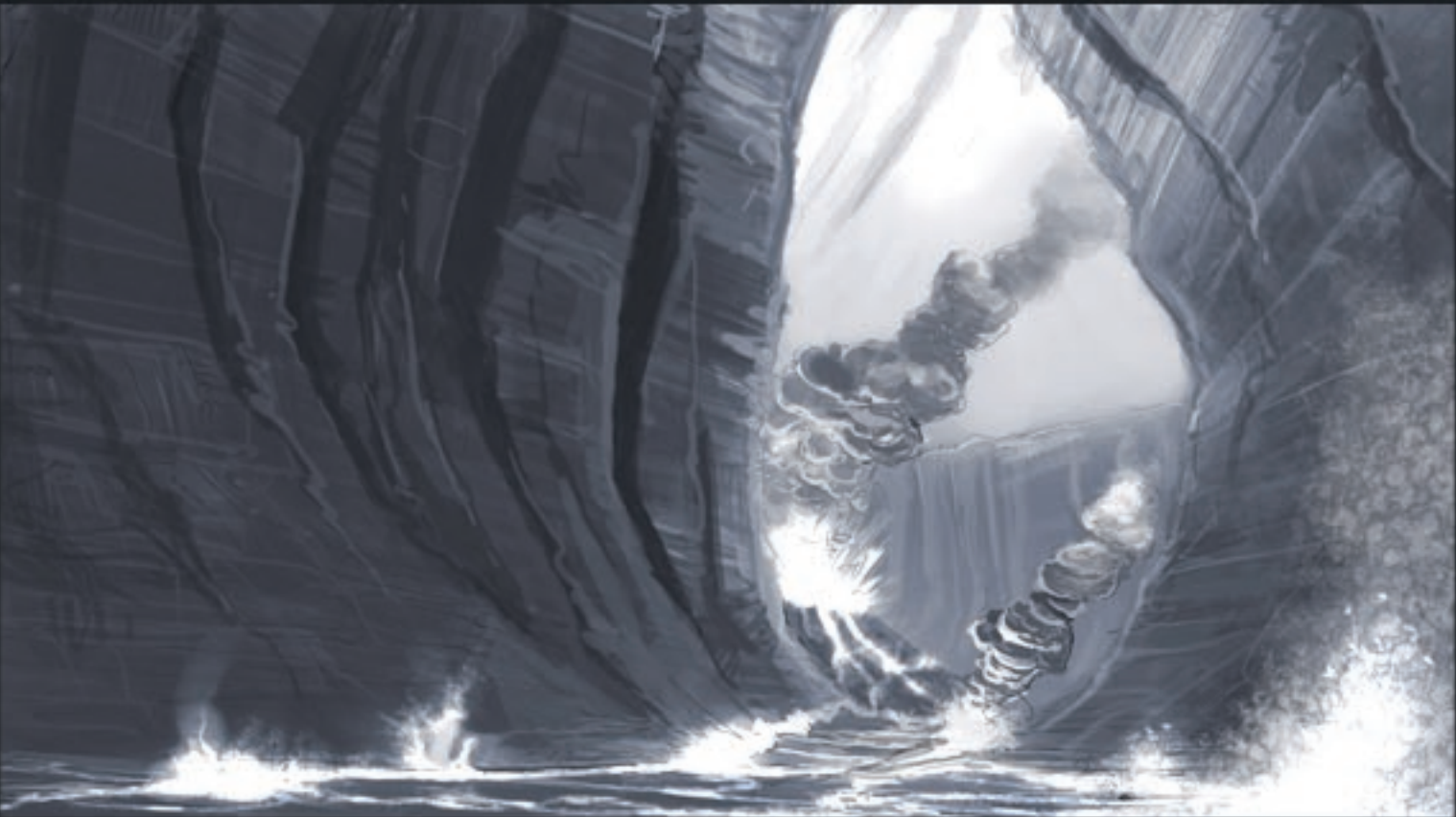
A main feature of the show was the placement of scientists within the environments. The pre-production work made this far less arduous than it could otherwise have been. Careful planning and being able to provide everyone on set with a clear idea of what we were looking to achieve, made for a smooth and pain free workflow.

As the rule goes, if it's big it's slow, this would be a constant reminder thoughout the show. Cameras had to conform to real world speeds and constraints, the managing and monitoring of these aspects, down to the finest details, like rock or pebble sizes would be paramount in maintaining and producing an accurate representation of scale.

For all these challenges and restrictions, the 2d team set about the task with relish. Good artists always look for fresh and exiting ways to tell a story, or portray and image. In this case, the inspiration was easy, we had the oportunity of creating something quite special, that none of us had witnessed before.

The 2d development also had the luxury of working in tandem with the 3d team who were busy researching, testing new tools and evaluating different workflows. This not only served to keep the 2d grounded within the restrictions of what the 3d tools were capable of, but also made us realise that we were going to be able to push the boundries much further than we originaly thought was going to be possible.

It is unusual to have so much cooporation between 2d and 3d departments at this stage of planning, and on shows of this scale and nature. However, in this case it was to prove highly rewarding, the collaboration and mixing up of methods and ideas, yeilding results that exited our clients about the potential of the show and pushed the team in directions that would have been thought only achievable by much much larger film post production houses.

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Part 2. 3d tools and workflow
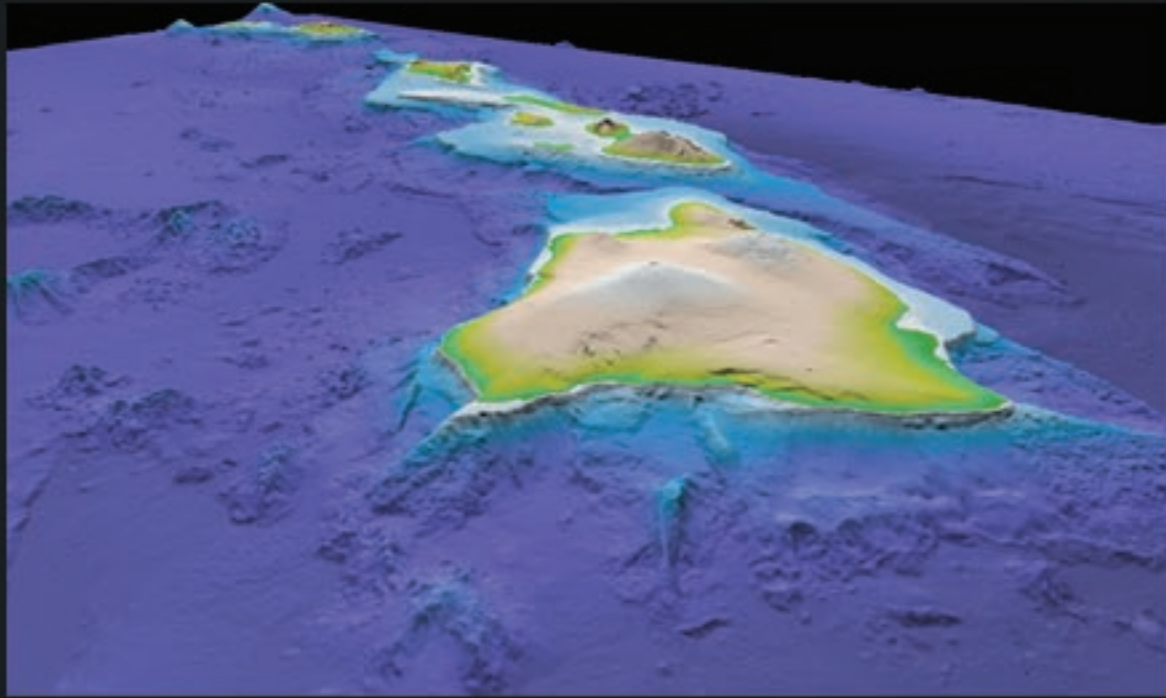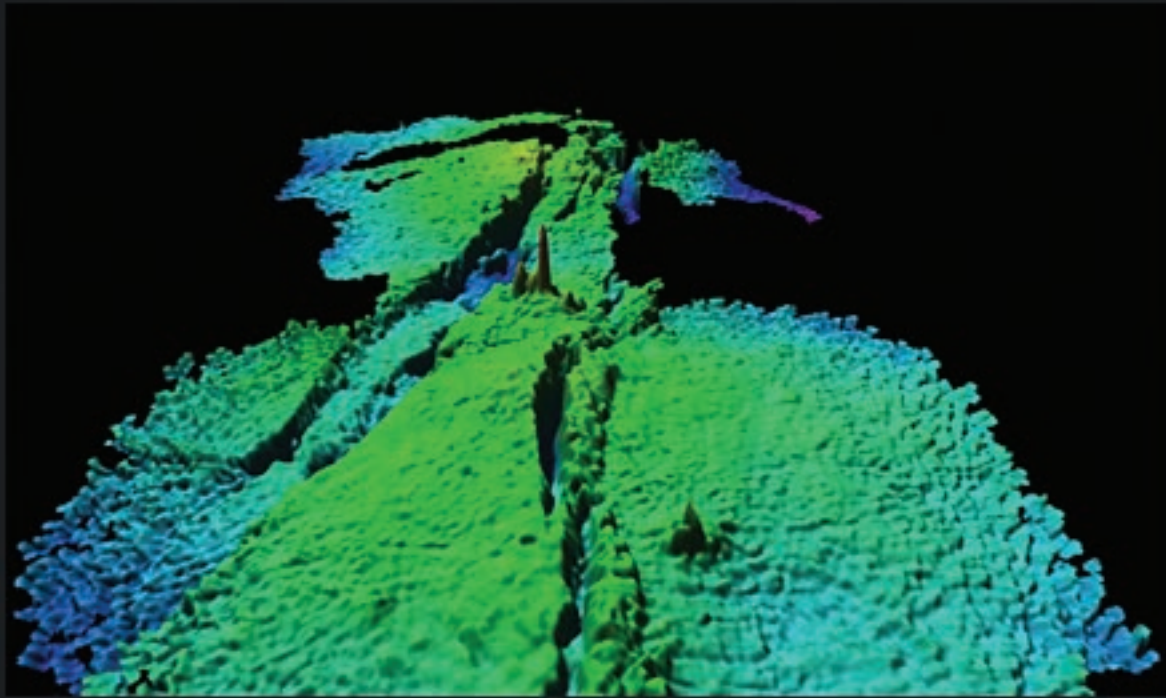
Above: sample images of the data sets and level of resolution we had to work with.

We knew from the very beginning that making the right choices at the start of the project was vital to making this show work. Traditional techniques are quite labour intensive and allow very little leeway for a director to make any changes. So it was essential that we discovered a method that would give us a far greater degree of flexibility.

After testing several alternative tools we decided to go with Terragen 2 as our major tool for terrain creation, texturing and rendering. This was a potentially risky choice, the software still being at alpha stage and some way off being a fully released product. Yet after some thorough stress testing and achieving solid early results, it was felt that the software had so much potential that we would deal with any unforeseen pitfalls as and when they arose. Our faith was repaid, as it soon became apparent that the level of support from the makers 'Planetside Software' was second to none.

Above: sample frame from the Challenger Deep sequence.

Above: sample frame from the Bahamas Bank sequence.

Above: sample frame from the Hawaii Debris sequence.

Terragen 2 has a unique workflow and a whole new set of tools to work with. As with any new software, nothing is totally intuitive, and so began the journey of learning to take the best from and integrate it into our pipeline. Scripts were written to handle data and asset flow between Terragen and Maya. This would ensure that we could easily combine any other 3d elements, and comfortably place our presenters within our rendered output from Terragen.

We were able to augment our low resolution data, as well as create massive and complex landscapes from scratch in relatively small time frames. Once created, there were no restrictions on camera placement, an almost unlimited level of resolution meant we could happily zoom down to a tiny spec of dirt on the ground if need be, with no loss of detail between. This gave our virtual sets an enormous amount of flexibility and creative freedom.