

**IMAX®**

**TOM HANKS**  
P R E S E N T S

**MAGNIFICENT  
DESOLATION**

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**WALKING<sub>ON</sub>  
THE  
MOON<sub>3D</sub>**

**Production Notes**

Exploring the Moon was humankind's most incredible journey. Between the years of 1969 and 1972, seven spacecraft traveled nearly a quarter-million miles through space, providing a select group of highly trained men the chance to step out into the unknown and explore the surface of the Earth's closest neighbor in the solar system. Their expeditions were odds-defying. The results... nothing short of history-making.

**Only 12 have walked on the Moon. You're next.**

Continuing the legacy and partnerships that have resulted in the groundbreaking IMAX films that have brought the far reaches of outer space down to Earth and into the cinema, IMAX, Lockheed Martin and NASA — responsible for one of the highest grossing large-format films, *Space Station 3D* — now join forces with legendary actor and filmmaker TOM HANKS and Playtone to produce the newest IMAX 3D space film: ***Magnificent Desolation: Walking on the Moon 3D***.

Through the magic of IMAX 3D, ***Magnificent Desolation: Walking on the Moon 3D*** showcases the past, present and future of space exploration as moviegoers experience what the extraordinary Apollo astronauts did when they first stepped onto the Moon. Through a combination of newly revealed photographs, rarely seen NASA footage, as well as CGI and actual live-action renditions of the lunar landscape, moviegoers will be immersed in the life-changing experiences of the 12 men who walked on the Moon—not just the larger-than-life events captured on the news, but what these men saw, heard, felt, thought and did while spending their precious hours on the lunar surface.

In keeping with NASA's vision of expanding the frontiers of humankind and encouraging us to continue to explore, discover and understand, *Magnificent Desolation* takes viewers on a wholly new journey, dusting off the historical accomplishments of the 12 adventurers and bringing them to vivid, super-sized 3D realization. The Apollo missions are viewed with a new-found amazement and, in the process, inspire new generations to engage in their own treks of exploration and discovery.

Hanks and his accomplished team of filmmakers will bring viewers back to the surface of the Moon through an inspirational journey that will open eyes and fire imaginations. The lunar adventures of our astronauts have become the stuff of history books, with some of their moments of exploration permanently lodged in the American consciousness (the iconic "...one giant leap for mankind," uttered by the first man on the Moon, Neil Armstrong)—yet *Magnificent Desolation* takes its cue from the words spoken by the second astronaut to set foot on the lunar surface, Edwin "Buzz" Aldrin. After Aldrin had leapt from the Lunar Module and followed Armstrong out into history, Armstrong had queried, "Isn't that something! Magnificent sight out here." To which Aldrin replied, "Magnificent desolation."—two words that seemed to sum up the experience on the Moon for not only the first, but for all of the subsequent Apollo lunar mission astronauts.

Narrator/Producer/Co-Writer Tom Hanks explains, "What we saw and what we found in our missions to the Moon was more diverse, more complicated and really more beautiful than what Neil Armstrong expressed in his magnificent quote. What has been lost—or maybe what wasn't represented in the first place—is the importance and the inspiration of all 12 journeys, all 12 men's stories."

Through The IMAX Experience<sup>®</sup>—complete with the world's largest film format and state-of-the-art digital surround sound—audiences will be transported to the Moon, alongside the Apollo astronauts during each incredible step of their journeys.

"Showing these experiences in IMAX 3D will provide the audience with an unforgettable experience," continues Hanks. "The 3D images projected on that huge screen gives the audience a never-before-seen chance to stand on the Moon right next to Neil, right next to Buzz, right next to Dave, right next to Gene and Jack and all the others who walked up there. IMAX 3D gives us the possibility of exploring these stories in a way that you simply can't do on a smaller screen."

The feature documentary *Magnificent Desolation: Walking on the Moon 3D* is produced and narrated by legendary actor Tom Hanks (whose driving

passion for the stories of the men who walked on the Moon—what they did and felt—fueled the four-year development of the project), GARY GOETZMAN (accomplished film producer and Hank’s producing partner at their company, Playtone) and MARK COWEN (director and producer of the Emmy-nominated, award-winning documentary *We Stand Alone Together: The Men of Easy Company*); Mark Cowen directs the film, from a script by Tom Hanks, Cowen and CHRISTOPHER G. COWEN. The executive producers are HUGH MURRAY and MARK HERZOG, and the supervising producer is JINI DÜRR.

Joining Cowen and his filmmaking team are editor WILLIAM SCHINSKI, director of photography SEAN MACLEOD PHILLIPS, production designer CHARLES LEE and composer JAMES NEWTON HOWARD.

A Playtone/IMAX Production, *Magnificent Desolation: Walking on the Moon 3D* is sponsored by Lockheed Martin Corporation and filmed with the cooperation of the National Aeronautics and Space Administration. For nearly 20 years, IMAX and NASA have teamed up to produce films with the goal of educating and inspiring young and old about the wonders of math, science and technology as viewed through the prism of space. *Magnificent Desolation* continues that legacy and will entice a whole new generation with the excitement and drama of the Apollo astronauts, whose monumental accomplishments were first broadcast into our homes more than three decades ago.

### **About the Story**

During the 1960s and early '70s, man achieved the unthinkable when a handful of brave adventurers blasted off from the Earth and ventured to our nearest neighbor in the solar system—daring feats of exploration not seen on such a mammoth scale since the 19<sup>th</sup> century. Those missions defined a generation and stood as shining examples of will triumphing over obstacle. But time has a way of turning the triumphs of the recent past into history book chapters...

*“So what, really, do you know about the Moon?”*

*“What do you remember about the Apollo missions to the Moon?”*

*“Can you name anyone who has walked on the Moon?”*

Questions not so easily answered by families at the California Science Center, where the film begins. While most still consider the Moon walks as astounding achievements, many are unclear about the details of the participants and the specifics of their missions—and come up with some very inventive answers!

But in *Magnificent Desolation*, through the magic of IMAX 3D, audiences have a chance to return to the Moon with these original explorers...to **see** and **hear** their stories in a way never before possible...to **remember** the majesty of their accomplishments. From a combination of historical kinescope, 16mm footage and 70mm still photography, together with computer animation and live-action re-creations of highlight events, *Magnificent Desolation* weaves a three-dimensional tapestry of life on the Moon as experienced only by these 12 men.

Christopher Columbus, Ferdinand Magellan, Meriwether Lewis and William Clark were all explorers whose feats left the world a smaller, less mysterious place. But for the 12 men who walked the lunar surface, who, for a brief time, lived in places only imagined—Neil A. Armstrong; Edwin E. “Buzz” Aldrin, Jr.; Charles “Pete” Conrad; Alan L. Bean; Alan B. Shepard, Jr.; Edgar D. Mitchell; David R. Scott; James B. Irwin; John W. Young; Charles M. Duke, Jr.; Eugene A. Cernan; Harrison H. Schmitt—their efforts extended human territory to the solar system beyond. They didn’t just bring back rocks and pictures...they brought home the Moon and ***made it part of our world***—a place on which people had worked, eaten, slept...were excited, hurt, tired, (sometimes) scared, awed and, ultimately, profoundly moved.

As those visitors to the California Science Center recall, sometimes inaccurately, these are successes to be remembered. For the children at the Center, the Moon provides a jumping off place for the imagination, particularly one little girl named Veronica Lugo, whose dream it is to become an astronaut and extend the exploration of the Moon to actual colonization. She holds up a drawing she has done of herself, standing proudly on the lunar surface.

The faces of those queried and the drawings from some of the children, along with archival images of Apollo missions, become panels which, through the magic of IMAX 3D, then fly in over the heads of the audience and reform to complete a mosaic picture of the object of so much conjecture and awe—the Moon itself.

Moviegoers are catapulted into *Magnificent Desolation* and onto the Moon’s surface as they experience the premiere lunar landing as if for the first time—viewed from the vantage point of someone already on the Moon—as astronaut Neil Armstrong leaps off the Module’s ladder, his white boots filling the screen like some gargantuan being from outer space, seemingly kicking moon dust (thanks again to 3D) onto the laps of the audience members.

The story then plunges backwards, during the pre-Apollo period when the Moon was just a bright disk in our night sky. Rumors and myths abound, along with early hypotheses of everyone from storytellers to filmmakers—what is the Moon really like? How would we get there?

As if to answer that question, audiences soon find themselves inside the cramped Lunar Module (LEM), along with two pilots, who guide it towards a perilous landing. We watch from the outside as the fragile, insect-like vehicle flies out of the IMAX 3D screen and between mountain ranges that tower thousands of feet above, dwarfing the vehicle and the audience...and breathe a sigh of relief as the Module, propelled by a thin thread of flame, gently lands on the rocky surface.

For every moon-walker, from Armstrong to Schmitt, the first step was a profound moment and all felt compelled to express their feelings for themselves and for the history books. But before stepping onto an airless world of extreme temperatures, explorers had to be outfitted in protective gear. The spacesuits they wore, for all intents and purposes, were tight-fitting spaceships that provided basic life support of a temperature-controlled atmosphere along with food and water. This enabled the astronauts to remain outside the lander for hours of lunar exploration and experimentation. Moviegoers will join in the struggle as the astronauts don and shed their suits inside the cramped space of the lander.

While all successful lunar landings were remarkably free of mishaps, the danger of mechanical failure was never that far off. What if, while driving the Rover far from the Lunar Module, a suit had malfunctioned? What if an astronaut had had to face a life-threatening situation? Filmmakers take these "what ifs?" and weave a heart-stopping segment called "Contingency," where a dramatization of a possible fail-safe scenario is also played out—thankfully to successful results. The Rover itself is used to startling, dynamic cinematic effect as it seems to bound over the heads of the theater audience.

Then, the excitement of stepping on this far-flung, inhospitable world—the physical exhilaration of movement in one-sixth gravity—is contrasted with the grueling hard work of exploration...the drilling, chipping, collection and hauling of geo samples, resulting in the inescapable fatigue and physical strains. All of this is played out as a race against the clock, counting down the minutes remaining while the lunar crew pack as much science and sample collection as possible into their limited stay.

Particular and memorable mission moments are re-created. Audiences join the astronauts from Apollo 15 as they perch on the vertiginous edge of the thousand-foot-deep Hadley's Rille, the Moon's version of the Grand Canyon that measures some 50 miles long and one mile wide. The camera zooms over astronaut Dave Scott as he stands perilously close to a ledge overlooking the Rille, then plunges roller-coaster-like down into the Rille on a ride only possible in IMAX 3D. The final moments of the Apollo program are also shown, as we

follow the Apollo 17 crew in their last minutes on the Moon's beautiful Taurus Littrow Valley.

*Magnificent Desolation* concludes with a consideration of the future...tinged with the hope that the intervening 30 years—when no human being has ventured beyond 350 miles above the Earth—will soon give way to a new wave of lunar exploration and the first steps to the rest of solar system.

We return to the Moon's surface one last time, now for the first time viewed during a lunar night, when everything is bathed in the blue glow of the light reflected from the Earth. No longer a place of unmarred desolation, the surface is now abuzz with activity—a colony of humans, observed from a distance by Commander Veronica Lugo...who removes from her suit a drawing that we recognize, one that captures the dream of a little girl who now stands squarely in the center of that dream. She is an astronaut of the future, laying claim to the legacy begun by the brave men of the Apollo missions.

### **About the Production**

For an exclusive group of 12 men, walking on the Moon became a reality during the years of NASA's Apollo space program, between 1969 and 1972. But for every one of those men, there were thousands of others who, in their imaginations, stepped out onto the lunar surface along with them. That was the case with a certain 13-year-old Californian named Tom Hanks.

Hanks remembers, "Neil Armstrong and Buzz Aldrin set foot on the Moon in the summer of 1969, 11 days after I had turned 13. I was one of those who had been fascinated, from the very start, by the space program and its efforts to put Americans in space and on the Moon."

The childhood fascination remained with Hanks as he matured and never waned. He continues, "I was very cognizant of the fact that it was an evolutionary step in our history, and there weren't that many in all human kind. There is the discovery of fire and then others—mixing metals, inventing gunpowder. Then, the step when man could fly like a bird—that was a big deal—and when man could swim like a fish. And when man walked on the Moon, that meant that we had achieved this accomplishment as a species, as a creation. That meant that everything prior to that was going to be measured by this watermark in our experience. I also had a great sense of the poetry of what that meant—it was a signpost that said we can figure out anything. There is no problem that exists in our world that the right amount of time, money, conscious will and energy cannot make happen. Here was the proof that *anything can happen.*"

Hanks' continuing interest with the Apollo program played into his projects as his acting and filmmaking career skyrocketed. In 1995, he portrayed Apollo 13 astronaut James A. Lovell in the Ron Howard-directed *Apollo 13*, which explored the harrowing five-day mission of the third lunar landing attempt; the film was nominated for 9 Academy Awards®. In 1998, Hanks served as executive producer of HBO's ambitious 12-hour dramatic film anthology *From the Earth to the Moon*—itself an exploration of the Apollo space program. Hanks' personal commitment to the project made the show a reality, which won three Emmys, including Outstanding Miniseries; Hanks directed the first episode and wrote and appeared in the final episode.

It was, in fact, during Hanks' work on the IMAX release of *Apollo 13* that he was exposed to the immersive possibilities of The IMAX Experience. The film was transformed via the IMAX DMR® (Digitally Re-mastering) process, by which 35mm films, or digitally captured films, are digitally re-mastered into the unparalleled image and sound quality of The IMAX Experience. Given the large size of the IMAX screens, the unparalleled detail and picture clarity, not to mention the unrivaled sound systems—the possibility of showing the majesty of the lunar surface as experienced by those who had been there lodged in his filmmaker's mind...and not only could the riveting subject matter be perfectly matched to the superior theatrical quality of IMAX, the entire project could be lifted to even greater heights if the filmic tale were told in IMAX 3D.

Despite the more in-depth storytelling involved in *From the Earth to the Moon*, Hanks still felt that there was a portion of the Apollo missions that had not been more fully explored onscreen. He observes, "We went to the Moon. Everyone knows that. We—by proxy in the form of the Apollo astronauts—flew up into the sky, sailed to the Moon and landed on Luna Firma. What we know too little of is what we did while we were there. What I wanted to do with *Magnificent Desolation* is take the audience to the surface of the moon—to the Ocean of Storms, the Fra Mauro Highlands and the Taurus Littrow Valley. Exploring the Moon was humankind's most incredible roadtrip. In combination with the remarkable cinematic possibilities of IMAX—along with the support and cooperation of Lockheed Martin and NASA—our aim is to bring along anyone who wants to take that giant leap for themselves."

Hanks adds, "Since the day I saw *Apollo 13* in IMAX, as well as IMAX's *Space Station 3D*, I came to believe that there was a missing piece in the filmed stories about space travel and Moon exploration—even in movies as great as *Apollo 13* and the series *From the Earth to the Moon*. What I hadn't seen in anything was a true sense of actually placing the viewer on the surface of the Moon. What was still lacking was the tactile experience of going to the Moon: how uncomfortable the suits are, what the actual vista looks like, how the Sea of Tranquility goes off into infinity. With IMAX 3D, the audience is placed on the Moon in a way that

has never been experienced before. The screen fills your vision to the lunar horizon and the 3D gives you a sense of the distance as measured by two human feet as opposed to just mythic, historical news footage. I can't go to the Moon, but with IMAX 3D, this is as close as I'm going to get."

It was while Hanks was serving as executive producer on the award-winning documentary *We Stand Alone Together: The Men of Easy Company* (along with Gary Goetzman—his partner in the film, television and record company Playtone—serving as co-executive producer) that his drive to make that film showing those giant leaps on the Moon intensified. The space program had also long been a passion of *We Stand Alone's* director and producer, Mark Cowen.

Cowen relates, "Most people's vision of what the Moon is comes from television transmissions from 1969 to 1972. As wonderful as those images were, they were telephone/television images that were being piped down from 238,000 miles away. They were a two-dimensional, black-and-white peek at a new and completely foreign terrain. So the idea to create a film that put moviegoers squarely on the Moon and give them the chance to feel what the astronauts felt, to look through their eyes, put on their boots and climb around on the Moon...and to supply those experiences using IMAX 3D in all its unbeatable, colorful glory—well, all of that was just too good an idea to pass up."

It was the return to the Moon—the second pass, the second chance—that gave the filmmakers the idea for the picture's title. Cowen remembers, "The obvious take would have been to call it something like 'One Giant Leap' or something else based on Neil Armstrong's quote. But Tom had had this interesting idea...who was the second man on the Moon and what did he say?" (Answer: Buzz Aldrin, whose quote of "Magnificent desolation!" became the title of the film.)

Cowen grew up during the heyday of America's space program and memories of collecting astronaut baseball cards and Apollo placemats dot his childhood recollections. Although he was still fascinated as the space program moved beyond lunar exploration and on to such projects as Skylab and the Shuttle programs, he found that the timbre of the public interest had changed.

He explains, "We sort of forgot about the 'destination' part of space exploration. The whole notion of first going into space was about finding new frontiers, pushing the envelope. And along the way, in the ensuing 30 or so years, we've kind of forgotten that a few men had packed a few things, boarded a rocketship, traveled almost a quarter-of-a-million miles and landed on the Moon and actually walked around. That's incredible.

"The accomplishment of actually getting to the Moon, repeatedly, is an amazing feat," continues Cowen. "But what we wanted to represent in this film was that

these were human beings that walked around up there. Yes, they were scientists, fly boys, pilots, steely-eyed missile men, but once you put them on the Moon it becomes the ultimate field trip, like, 'Hey, Pete, look at this!' It's that awe that we aimed to capture in the project—their sense of wonder that accompanied the exploration."

It was this desire to remind the current generations of the "cool and important" accomplishments of the Apollo program that galvanized the filmmakers and urged them to make *Magnificent Desolation*.

Hanks (as narrator, producer and writer), Goetzman (producer) and Cowen (director, producer and writer) surrounded themselves with both longtime associates and relatively new colleagues to fill the ranks of their filmmaking team: executive producer Hugh Murray, expert in IMAX 3D filmmaking from his 15 years at IMAX; executive producer Mark Herzog, who began his association with Mark Cowen in the early '90s and with whom he continues to partner in the marketing/television firm Herzog Cowen Entertainment; writer and associate producer Chris Cowen, who joined Playtone as creative executive in 1998 after writing several feature films and working in production; supervising producer Jini Dürr, president of a large-format film production house with a long list of producing credits; editor William Schinski, who continues his tenure with Cowen and Herzog as a senior editor at Herzog Cowen Entertainment; director of photography Sean MacLeod Phillips, whose lengthy credit list includes work in virtually every motion picture format; production designer Charles Lee, well versed in creating other-worldly settings; and James Newton Howard, a six-time Oscar<sup>®</sup>-nominated film and television composer.

But just like the Apollo astronauts before them, Hanks, Cowen, Goetzman and their team had to face months and months of research and experimentation before their cinematic astronauts could set foot on a simulated Moon. To fashion a filmed re-creation of actual lunar history called for an inordinate amount of certainty on the part of the filmmakers, most of whom were "space buffs" in their own right, committed to honoring the legacy of the Apollo program with filmic accuracy and attention to detail. "We weren't about to just put guys in suits, stand them on some stage and call it a day," quips Cowen.

Cumulatively, the astronauts of Apollo (missions 11, 12 and 14 through 17) logged almost 300 hours—approximately 12½ days—exploring and documenting the surface of the moon, which included "taking thousands and thousands of both color and black-and-white photographs using large-format, still [Hasselblad] cameras." In total, some 32,000 photographs were taken during the Apollo missions. (Although the company dates to 1841, just two years after the invention of photography, it was Hasselblad's son who steered the company into photography. It was the founder's great-grandson, Victor, who created a large-

format still camera in the 1940s. The name today is synonymous with excellence in cameras and still photography.)

Executive producer Hugh Murray continues, "And everywhere the astronauts stopped, they would take 360° panoramas of the surrounding vistas. So we have this huge database of very high-resolution photographs from which to allow us to re-create the lunar landscapes in 3D."

With NASA lending its cooperation to the project, other treasures came to light, including unreleased video footage of the lunar expeditions. This would come in handy for a committed band of filmic storytellers keen on visually telling the truth about this often (but never fully) seen world of the Moon.

And although pictures are indeed worth a thousand words, words themselves can sometimes be just as valuable—especially when spoken by a handful of men lucky enough to have actually traversed the lunar surface. Pages upon pages of transcripts of astronauts' verbal exchanges (with each other and with NASA on Earth), as well as commentary about the missions, have been compiled over the last decade by noted space scholar Dr. Eric Jones in *The Lunar Surface Journals*, a massive archival database which chronicles the moonwalks as recounted by the astronauts.

Excerpted by the writers and incorporated into the screenplay, these astronauts' words are brought to life by an array of some of Hollywood's most recognizable and sought-after motion picture and television actors, including: Morgan Freeman (Neil Armstrong), John Travolta (Jim Irwin), Matt Damon (Al Shepard), Paul Newman (Dave Scott), Matthew McConaughey (Al Bean), Bill Paxton (Ed Mitchell), Barry Pepper (John Young), Gary Sinise (Gene Cernan), Scott Glenn (Charlie Duke), John Corbett (Jack Schmitt), Brian Cranston (Buzz Aldrin) and Peter Scolari (Pete Conrad). Additional voices are supplied by Kevin Pollack, Rita Wilson, Tim Matheson, Donnie Wahlberg, Frank John Hughes, Rick Gomez and Neil McDonough.

Hanks comments, "400,000 people were involved in making this happen. The way you tell the stories of all of these hours logged on the Moon is to do it in the perspectives of the guys who were there. You make it as individual as possible, show how tactile it is, show their faces, even if you don't have their faces. You do it in as many of the words as possible of the guys who actually witnessed it. It's one thing to talk about the science experiments that went on, but it ends up being 'blah, blah, blah' after awhile. But when you add the details that it's a billion-dollars' worth of science experiments, performed by tired men in very bulky white suits with big, thick gloves that were only breathing as much air as they could carry on their backs, and that they were always pressed for time,

doing what they did as fast as possible...that then gives you an idea of the bigger picture."

Together these images and words are the basis from which the filmmakers—particularly writers Hanks, Mark and Chris Cowen, as well as production designer Charles Lee, along with legions of set builders, craftsmen, visual FX and GCI artists—construct the world of *Magnificent Desolation* and give it its voice.

Director Mark Cowen says, "We spent two years researching this film. We knew if we were given this chance by IMAX, known for its space legacy in world cinema, and Lockheed Martin, who came onboard to support the film, as well as NASA...to do anything less than that amount of research—going through the thousands of hours of footage, the reams of transcripts and the thousands and thousands of photographs—it wouldn't be doing justice to the opportunity provided. We've got a chance to try our hand at literally building the Moon here. For a bunch of space geeks like all of us, we couldn't have been happier. We're kids in the candy store. We're getting a Lunar Module and a Lunar Rover and astronauts in suits—a dream come true."

For the aerospace engineering giant, Lockheed Martin, *Magnificent Desolation* presented yet another opportunity to partner with IMAX and NASA—the continuance of a successful collaboration now in its third decade. The company's Steve Chaudet, Vice President of State and Local Government Affairs and PAC, comments, "Lockheed Martin's involvement with IMAX goes back to 1983, so we're approaching 25 years. And it's been one of the most successful partnerships, not only with IMAX but with NASA as well. We see *Magnificent Desolation* taking us to a new level. Not only will it be historic, in the sense that it shows the Apollo astronauts on the Moon, but we hope it will inspire a whole new generation of young people to think about careers in science and math and potentially, to become the astronauts of the future. By the time the United States goes back to the Moon, the young viewers will be old enough to consider going to the Moon themselves...and that's very exciting for us."

And for all the collaborators coming together on this "dream" project, who better to serve as advisor to a group attempting to create a re-telling of the Apollo lunar expeditions than someone who had actually **been there**?

"We were incredibly fortunate to bring on Commander Dave Scott, who headed Apollo 15 and also served in the Gemini and early Apollo programs. To have an astronaut when you're making a movie about the Moon and astronauts...well, it was comforting to know that we were going to get it right," adds Cowen.

"Dave Scott kept us honest every step of the way," Hanks observes.

As Team *Desolation* sifted through the mountains of source material, the deciding factor in their editing down of scenic possibilities became clear. Tom Hanks explains, “Although every minute on the Moon could be considered a great moment, simply by the fact that we had been there, there are probably about 30 to 40 really famous moments that are remembered. So we decided, instead of re-telling those moments that are considered classics, we wanted to go just to the left or right of those instances—what happened prior to or immediately after that was said and done? So the stories we are telling are not often told.”

As the script began to coalesce, intensive work during pre-production gave rise to a definitive plan that would allow for the many facets of physical production to be seamlessly blended with a variety of visual effects, digital work and CGI necessary to create the 3D world of the Moon – considering the clarity and size of the projected image inside IMAX theaters and the superlative presentation, the seamlessness of the finished product was paramount to the filmmakers. (“Creating a film for anyone is difficult enough, but to fashion something of this nature for presentation in IMAX—that’s painting on the largest cinematic canvas available—it’s the ultimate,” comments director Cowen.) But it was something much less technically involved that also posed a challenge to filmmakers.

The director explains, “We were going to be using a lot of different technologies to create this amazing IMAX 3D film. Physically, we would build a single, large lunar landscape where small sections could be dressed and shot differently to represent the various Apollo landings. We would shoot using green screen, to then digitally put in the differing horizons from actual photographs shot by the astronauts. Additionally, there would be CGI to take out certain things and smooth over some of the seams. But to get our astronauts, we would shoot live-action, with our astronauts on wires to simulate the one-sixth gravity of the Moon.”

And the challenge?

“We first thought about going with dancers to get that almost graceful one-sixth gravity movement. But those astronauts are in replica Apollo spacesuits, down to the last stitch and emblem. And on Earth, those suits are very heavy, so we would need stuntmen to wear them and move around. Some of these guys have worked on some of the biggest and best action adventure films in the past 10 years and here we are putting them on wires and asking them to do very subtle work, simulating the one-sixth gravity. They all sort of said, ‘Yeah, yeah, no problem, easy, don’t worry.’ Well, I think if you ask any of them now, they will tell you that it’s actually been one of the most difficult processes for them,” says Cowen.

The one-sixth gravity movement was provided by a specialty overhead gantry fly system composed of two axis, X and Y, with counterweights to create the lighter gravity motion. The system's header (a 60' beam that travels the width of the set and run by hand crank) and the tractor (electric motor-operated instrument that runs the right to left motion) are controlled in tandem to allow the astronauts, suspended by overhead wires, their cross motion on the set. All of the astronauts' movement was courtesy of the fly system, with CGI incorporated only to remove the wires suspending the stuntmen in the finished shot. Additional challenges lay in reproducing the same movements in repeated takes—when cameras eventually rolled on the first day of shooting, it took some on-the-spot fine-tuning to not only refine the movement, but to also accurately simulate the one-sixth gravity (fly riggers eventually opted to eyeball the counterweight amounts rather than go on a strictly mathematical formula of six to one).

Filming of the lunar expeditions would take place in soundstages on the Sony/Columbia lot, one of the older film studios in Los Angeles. Interestingly, *The Wizard of Oz*—the 1939 classic treasured for innumerable reasons that also featured cutting-edge (for its time) special effects work—was filmed one stage over from where *Magnificent Desolation* was shot.

In building the physical set to represent the lunar surface, production designer Lee, along with construction and art department crew members, utilized a few earthly, not-so-sophisticated techniques to achieve an out-of-this-world look. The entire structure of stage platforms was covered with a layer of styrofoam, which was then iced over with one inch of concrete. While the concrete was still wet, the construction craftsmen (as well as a few friends and family members, who could not pass up the chance to leave their mark on the surface of the 'Moon') distressed the setting mixture by hurling golf balls and pebbles into the air and onto the set—the resulting irregularities rendered the signature lunar surface variations.

To find the correct stand-in for the surface dust, differing substances were put through a series of trial and error tests. Filmmakers were looking for just the right mixture of weight and stick-to-it-iveness. Concrete dust was too light and created clouds. In the end, dust from pulverized roofing tiles was found to provide just the right amount of heaviness and facility. (As the dust proved an excellent base to receive and hold imprints, crew members working on the set had to don special foam overshoes with soles that mimicked the astronauts' boots. It wouldn't do for audiences to be jarred out of their realistic trip to the Moon by spotting a running shoe footprint next to the Lunar Module!) Moon rocks were also created out of distressed, painted styrofoam, so that the stuntmen could lift and maneuver them as if they weighed one-sixth of what they appear to weigh.

When it came to some of the most significant set pieces utilized in *Magnificent Desolation*, the production was indeed lucky to receive several very special loans from the Kansas Cosmosphere and SpaceCenter: an exact replica of the LEM or Lunar Module exterior (approximately 19' high by 12' wide), precise in its accuracy down to the etching on the windows and the gold foil or Kapton used to reflect the sun's infrared rays; a reproduction of a portion of the LEM interior, historically accurate down to the labels under each switch along with door and window placement (which, when enclosed, created a cramped eight-foot by eight-foot set); and a model of the Lunar Rover utilized in Apollos 15-17 (three Rovers remain abandoned on the Moon's surface). The Cosmosphere also made available smaller items, such as an ALSEP (Apollo Lunar Surface Experiment Package), a collection of tools used by the astronauts to conduct their pre-appointed scientific tests—one that was actually employed by astronauts during pre-mission training.

As a museum piece, the Lunar Rover was never meant to actually move of its own volition and was therefore never outfitted with an operable motor; filmmakers had resigned themselves to wenching the Rover and pulling it across the set (removing the tether in post-production). Luckily for production, however, the head of Sony maintenance—who happened to also be in charge of keeping the studio's golf carts up and running—spied the Rover and after asking what specifically it was for, volunteered to "fix" the vehicle. After installing a borrowed golf cart motor (cleverly camouflaged so as to not destroy the historical accuracy of the piece) and retrofitting with shock absorbers, the newly customized Rover was drivable and propelled the stuntmen/astronauts realistically (bounding almost as if under the effect of one-sixth gravity) across the set's lunar surface.

Filming a 2D film under such circumstances would be a taxing undertaking on its own, but as *Magnificent Desolation* was to be an immersive, 3D trip to the Moon, yet another set of challenges posed themselves to Cowen and crew: the technical aspects of the actual IMAX 3D filming process would need constant surveillance and would dictate everything in the shoot from camera placement to actors' movements.

One of the many duties of executive producer Hugh Murray was maintaining an ongoing discussion with director of photography Sean MacLeod Phillips to ensure that "everything in the IMAX 3D world is going to work and be comfortable for the audience to view."

Murray elaborates, "When you're filming in 3D, you're actually shooting two films: one in a left-eye camera and one in a right-eye camera. Very simply put, in normal vision, the two human eyes converge, rotating in slightly, to line up

and focus on an object. In an IMAX 3D theater, we trick the human eye by showing these two films simultaneously—for the object to ‘float,’ the right-eye camera will show the image slightly to the left and the left-eye camera will show it slightly to the right. So your eyes, in order to be able to see both of those images at once, have to slightly rotate inwards just as in normal vision, and where the views cross is where you see that object floating.” Each member of the audience wears custom-designed polarized IMAX 3D glasses. The lenses of the glasses are carefully aligned with the polarized filters on the left and right lenses of the IMAX 3D projector. The polarization effect between the projector and the glasses enables the right-eye image to only be seen by the right eye and the left-eye image to only be seen by the left eye.

The trick to keeping the audience comfortable is in making sure that the eyes don’t have to continually adjust to re-focus on objects near then far or over rotate, maintaining a zone of comfort. “You can’t adjust the space in between your eyes but obviously the space between the cameras can be—so it becomes about making sure the cameras adapt to maintain that comfort zone.”

Within the bank of monitors supplying the camera’s eye images to Cowen and his team was a single screen that displayed the actual footage of the lunar landing that the filmmakers were trying to re-create. This side-by-side comparison helped with replicating the shot—the stuntmen’s movement and blocking; the placement of everything, from the manmade lunar equipment to the Moon’s natural geology; and the lighting from the sun, stars and astronaut-provided illumination.

More often than not, on-site advisor Dave Scott could be found sitting in front of the monitor displaying the lunar footage. In his customary humility, Scott sums up his contribution during principal photography: “I just watch and every once in a while, I tap Mark on the shoulder...just to let him know I’m here.”

Scott had previously worked on both the Tom Hanks’ projects *Apollo 13* and *From the Earth to the Moon* and came to *Desolation* with the highest of expectations. He offers, “It’s been my experience that Tom gets involved in quality projects. With him behind it, I knew it’d be a great story. And then when you combine that with IMAX and IMAX 3D, I think this will get viewers as close to the Moon as they can get. I think IMAX’s objectives are education and entertainment and, hopefully this film will enable generations to come to experience what we did a long time ago.”

Director Cowen puts Scott and his invaluable input into perspective when he says, “There were those moments when I said, ‘Action,’ then we watched the astronauts go across the lunar surface, and then I’d yell, ‘Cut,’ and think, ‘Wow, that was great.’ Then I’d turn to Dave and say, ‘Was that okay, Sir?’ And he’d

just look at me with this twinkle in his eye and say, 'Well, let me tell you a little story...' And then instead of correcting a shot, he would tell you a story and give you the opportunity to find what you needed. He really understood the process of making a movie and gave us rare insight that helped us make the best, most realistic depiction of those events possible."

Scott adds, "I had a great experience advising on *Magnificent Desolation*, getting to relive some of my time in the Apollo program. To see the lunar surface, expertly re-created and filmed in IMAX 3D—it transported me to the moment when I got to walk on the Moon. If you ever wanted to know how I felt, what it was like—this is the closest I've seen. It put me back there—and I think it will allow people to really experience these amazing stories for themselves."

Of the lunar missions re-created for *Desolation* are moments from: Neil Armstrong's and Buzz Aldrin's Apollo 11 premiere mission to the Moon; Apollo 14's Alan Shepard and Edgar Mitchell during the first successful mission devoted entirely to scientific exploration; Apollo 15's Dave Scott and Jim Irwin, their life aboard the craft and their precarious descent through the jagged, mountainous terrain, along with the first use of the Lunar Rover; Charlie Duke's quiet moment during Apollo 16 and exploration of the Descartes highlands; and the final moments of Apollo 17's closing chapter—the last visit to the Moon. Scenes are not restricted to the past, however, as depictions of potential future expeditions are also presented, along with a hypothetical sequence of astronauts employing emergency procedures to overcome a life-threatening near-miss.

The actual shooting schedule for *Magnificent Desolation* covered some 19 days—what could be thought of as brief in the feature film world. But Hugh Murray is quick to point out that even though filming was completed, the finished film was still a ways off. He explains, "The little piece of our lunar set is going to be inserted into a larger landscape, which is re-created from the actual photographs from the Moon...so it's completely realistic."

A variety of filmic techniques were employed to create the puzzle pieces necessary for later assembly into the IMAX 3D product. NASA had graciously supplied a vast amount of historical footage, which unfortunately came in several formats: lunar surface exploration had been documented on both 16 and 35mm, along with Kinescope (shot by television cameras), which had been transmitted back to Earth; some Saturn rocket launch shots also existed in 70mm. Any shots woven into *Magnificent Desolation* would need to be transferred to 35mm (if not in that format already) and then subjected to the IMAX DMR processing for enlargement and image clarification.

The expansiveness of the lunar surface set was captured through the lens of the IMAX 3D camera. Additional photography was completed using a specially

constructed Vista Vision camera (created by director of photography Sean Phillips), which consisted of two 35mm cameras affixed together and turned on its side; again, footage would be run through IMAX DMR processing for conversion. The Vista Vision cameras offered high-resolution images which offered picture clarity that could stand up to the eventual enlargement to 70mm. For a handful of incredibly tight shots (e.g., inside the LEM), Phillips operated within the cramped filming quarters by building a 35mm, four-perf camera, which could be easily maneuvered inside the space.

One of the desires of the filmmakers was to recast the enormity of the lunar landscape into a graspable, human-related scale. When looking at photographs of the Moon, one is confronted with an alien vista, with geological shapes not formed by our concept of atmospheric weather. To the unaccustomed eye, it is unclear whether something viewed is large and far away or small and up close, as far off objects are not seen as hazy (as they are when viewed through air on Earth). Without recognizable (a.k.a. manmade) reference points, it is difficult to put such a view into scale in relation to human beings. By using the NASA-supplied detailed surface maps combined with the archival, high-resolution photographic images, the filmically created “super-sized” environs of the Moon will be realistically rendered in 3D—which when viewed through the human eye behind the specially polarized, IMAX 3D glasses (thereby providing the viewer a built-in point of reference) will bring the vastness and beauty of the Moon’s surface down to Earth.

One of the most startling examples of this is provided by the dazzling landing of the Apollo 15 Lunar Module (under the leadership of Commander David R. Scott!). As the first mission to land in a mountainous region, it set down beside an enormous canyon known as Hadley’s Rille; before landing, the Module had to be guided through rough terrain, with mountains towering thousands of feet above. In *Magnificent Desolation*, this astounding maneuver is seen not only from the point of view of the two astronauts, Scott and Irwin, but also literally from on high, outside the craft, where the truly dangerous nature—and almost balletic choreography—of the landing is clearly presented.

Other instances that exploit the sweeping, transporting effects of IMAX 3D include Armstrong’s first steps (literally, as his seven-story-high moon boots descend into frame); the Lunar Rover, motoring and bucking over the heads of the audience, across the surface of the Moon like a retro-futuristic dune buggy on a day at an outer space beach; the re-enactment of a hypothetical, “what if?” contingency plan, as a pair of representational astronauts combat a life-threatening situation and race against the clock to return to the safety of the LEM; and the opening and closing sequences that feature the mosaic formation of the Moon out of free-flying panels that zoom in over the audience and re-form to complete a picture of our closest galactic neighbor.

Not every moment depicted in the film concerns the magnitude of the lunar quests and larger-than-life achievements—the astronauts were, after all, very human (albeit incredibly accomplished and trained). It is these very “human” moments which the filmmakers were committed to showing—to reveal the men inside the iconic spacesuits. The voiceover narration attributed to the astronauts (though voiced by such actors as John Travolta, Morgan Freeman and a host of others) are the words these men said, their thoughts, their communications with one another while they were literally making history. One very particular instance stood out as singular and special to director Cowen.

“Charlie Duke of Apollo 16 was a truly great astronaut—an exceptional pilot, very serious about his job, not flashy in the least,” Cowen explains. “When he got up to the Moon, he requested a personal moment from NASA during one of his moonwalks. That’s not something NASA would normally consider—every minute was scheduled, time was incredibly precious—but they gave it to him. So he hopped about 50 yards away from the Module, took something out of his pocket, laid it down on the surface and then with his NASA camera, and without NASA knowing it, he took a photograph. Back on Earth, when the shots were developed, they saw rock, rock, rock and then an interesting image. When they blew it up, they saw that it was a photograph of Charlie Duke’s family amongst the lunar dust and rocks...on the back of it, Duke had written, ‘This is the family of astronaut Charlie Duke,’ and he had dated it.

“That’s what it’s all about for me,” continues Cowen. “Here’s a man who spent a lifetime training as an astronaut who traveled all the way to the Moon, and in the one nanosecond he had to himself, he looked back up at the Earth and thought of his family. It doesn’t get more special than that.”

Tom Hanks sums up what everyone behind *Magnificent Desolation* hopes to accomplish with the film when he says, “Hopefully, *Magnificent Desolation* will represent, in some small way, the accomplishment of what those 12 guys did. There was science that went down on the Moon, there were discoveries that went down on the Moon, there were geological treasures that were discovered. But to me, the great treasure is the human experience...an embodiment of human beings’ desire to go off and see things that have never been seen, of man’s desire to explore. Apollo’s place in history is as the penultimate moment where our best way of thinking and the best of ourselves came to fruition at just the right moment. And everything that followed, and that will follow, is what comes after that moment.”

Sponsored by Lockheed Martin in cooperation with the National Aeronautics and Space Administration, Tom Hanks presents a Playtone/IMAX Production:  
***Magnificent Desolation: Walking on the Moon 3D***. It is narrated by Tom

Production Information

Hanks. The director of photography is Sean MacLeod Phillips. The production designer is Charles Lee. The music is by James Newton Howard. It is edited by William Schinski. It is written by Tom Hanks, Mark Cowen and Christopher G. Cowen. The supervising producer is Jini Dürr. The executive producers are Hugh Murray and Mark Herzog. *Magnificent Desolation: Walking on the Moon 3D* is produced by Tom Hanks, Gary Goetzman and Mark Cowen, and directed by Mark Cowen. ©2005 IMAX Corporation and Playtone. It is distributed by IMAX Corporation. IMAX® is a registered trademark of IMAX Corporation. [www.imax.com](http://www.imax.com); [www.imax.com/magnificentdesolation](http://www.imax.com/magnificentdesolation)

### **About the Cast**

One of the world's most admired and respected actors, **TOM HANKS** (Narrator / Producer / Writer) also holds the distinction of being the first actor in 50 years to be awarded back-to-back Best Actor Academy Awards®. In 1993, he was rewarded for his compelling performance as the AIDS-stricken lawyer in *Philadelphia*, and the following year won the Oscar® for his outstanding performance in *Forrest Gump*. He also won Golden Globe Awards for both. Throughout the success of *Forrest Gump* (the fourth largest grossing movie in history), Hanks won a Golden Globe, a Peoples Choice Award, a Screen Actors Guild Award, a Chicago Film Critics Award, a National Association of Theater Owners Male Star of the Year Award and the Hollywood Women's Press Club Award. In addition, he was named Man of the Year by Harvard's Hasty Pudding Theatricals for his performance as astronaut Jim Lovell in Ron Howard's *Apollo 13*.

In 1996, Hanks made his feature film writing and directing debut with *That Thing You Do!* that follows the meteoric rise to fame of a local rock band named The Wonders from Erie, Pennsylvania, in the summer of 1964. The film's signature song, "That Thing You Do!," not only reached the top 10 on many contemporary music charts, but was nominated for an Academy Award® for Best Original Song. Hanks also appeared in the film.

Born and raised in Oakland, California, Hanks first became interested in acting during high school. While attending California State University in Sacramento, he appeared in *The Cherry Orchard* and met director Vincent Dowling, the resident director of the Great Lakes Shakespeare Festival in Cleveland. Dowling invited Hanks to intern with the company, where he made his professional debut portraying Grumio in *The Taming of the Shrew*. Hanks appeared in other Great Lakes productions, including *Two Gentleman of Verona*, for which he received the Cleveland Critics Award for Best Actor. From Cleveland, Hanks went on to New York, where he appeared in his first feature film, *He Knows You're Alone*, and onstage in *The Taming of the Shrew*.

After moving to Los Angeles where he performed in a production of *The Dollmaker*, Hanks got his big break when cast as the lead in the ABC comedy series *Bosom Buddies*. This led to starring roles in *Bachelor Party*, followed by Ron Howard's *Splash*— a box office hit that started him on his path to becoming one of Hollywood's busiest and most sought-after actors. Hanks' many film credits include *Volunteers*, *Nothing in Common* and *A League of Their Own*. In 1988, with his box office success established, Hanks found himself a critical success with highly acclaimed work in *Punchline* and *Big*, for which he earned his first Academy Award® nomination and Golden Globe Award. The same year, the L.A. Film Critics recognized the two performances by bestowing on him their

coveted Best Actor Award. In 1993, he received a Golden Globe nomination for his work in *Sleepless in Seattle*.

Constantly challenging himself, Hanks served as executive producer for HBO's *From the Earth to the Moon*—an ambitious 12-hour dramatic film anthology that explored America's Apollo space program. Not only did he personally help make this show a reality, he directed the first episode and wrote and appeared in the final episode.

Hanks starred in Steven Spielberg's 1998 feature *Saving Private Ryan*, in which he played a soldier who went deep behind enemy lines to save a trapped private during the Allied invasion, and for which he received an Oscar® nomination. He also starred in 1999's *The Green Mile*, written and directed by Frank Darabont and based on the Stephen King novel.

In 2000, Hanks starred in Robert Zemeckis' *Cast Away*, earning another Oscar nomination for his role as sole survivor of a plane crash on a deserted island. Also in 2000, he served as executive producer (as well as directing one of the episodes), for the epic HBO miniseries *Band of Brothers*, based on the Stephen Ambrose book that chronicles a group of paratroopers from their training in Georgia through their subsequent battles on D-day, the Battle of the Bulge and their eventual capture of Hitler's Eagle's Nest. It aired in Spring 2001 to wide-scale critical acclaim, leading to a Golden Globe win for the miniseries in 2002.

In 2002 Hanks starred in the Sam Mendes' gritty Depression Era drama *The Road to Perdition*, opposite Paul Newman and Jude Law. He followed with the stylish caper *Catch Me If You Can*, opposite Leonardo DeCaprio, based on the true exploits of international con man Frank Abagnale, Jr. Hanks portrayed FBI agent Carl Hanratty, who ultimately caught Abagnale, a counterfeiter who cashed \$2.5 million worth of bad checks between 1964-1970.

Hanks recently starred in the Coen brothers' dark comedy *The Ladykillers*, as an eccentric southern professor who assembles a band of incompetent thieves to rob a Mississippi riverboat, and Steven Spielberg's *The Terminal*, with Catherine Zeta-Jones, about an Eastern European immigrant stranded indefinitely at JFK Airport when his passport is invalidated by a political upheaval in his home country. He was last seen re-teaming with *Castaway* director Zemeckis in the animated film adaptation of the Caldecott Medal-winning children's book *The Polar Express*, by Chris Van Allsburg, portraying The Conductor; the film was a worldwide Christmas holiday hit. Up next, Hanks will star in the motion picture adaptation of the runaway bestseller *The Da Vinci Code* for Oscar®-winning director Ron Howard.

Hanks lives in Los Angeles with his wife, actress Rita Wilson, and their family.

### **About the Filmmakers**

**GARY GOETZMAN's** (Producer) producing credits include *My Big Fat Greek Wedding, Beloved, That Thing You Do!, The Silence of the Lambs, Philadelphia, Devil In a Blue Dress, Miami Blues, Modern Girls, Amos and Andrew, Storefront Hitchcock* and the 2002 Emmy and Golden Globe winner for Best Mini-Series, HBO's *Band of Brothers*. He most recently produced the global hit *The Polar Express*. Goetzman next produces the CGI animated adventure *The Ant Bully* for Warner Bros. Pictures.

At 21, Goetzman was production manager for Jonathan Demme's directorial debut, *Caged Heat*. He also produced the Talking Heads' concert film *Stop Making Sense*, Neil Young's long-form video *The Complex Sessions* and music videos for Bruce Springsteen, Suzanne Vega, David Byrne and Jane Child's number one music video, "Don't Wanna Fall in Love," which he also directed.

In 1998 Goetzman teamed with Tom Hanks to form Playtone, a film, television and record company.

**MARK COWEN** (Director / Producer / Writer), director and producer of the award-winning documentary *We Stand Alone Together: The Men of Easy Company*, began his filmmaking career nearly two decades ago producing and directing behind-the-scenes documentaries on the making of motion pictures. This experience has developed into a notable career in the documentary genre, creating material for both film and television, including the newest IMAX feature, *Magnificent Desolation: Walking on the Moon 3D*.

Executive-produced by Tom Hanks and Steven Spielberg, *We Stand Alone* was released as a feature film with a prime-time broadcast debut on HBO. The project garnered a 2002 Emmy Award Nomination for Outstanding Nonfiction Special.

*We Stand Alone* was produced over a three-year period and amassed over 250 hours of interviews with the Band of Brothers veterans from Easy Company, 506th Parachute Infantry Regiment, 101st Airborne. The interview material from this documentary became part of the permanent collection at the Library of Congress in 2003.

In the span of his 17 years as a filmmaker, Cowen has worked on more than 300 documentary projects, establishing himself as one of the leading behind-the-scenes director/producers in the industry. He has also worked with such esteemed filmmakers as Steven Spielberg, Tom Hanks, Robert Zemeckis, Sydney Pollack, Ron Howard, Jonathan Demme and Steven Soderbergh.

After seven years with ZM Productions, Cowen established The Berkeley Group, which quickly became a leading provider of documentary programming for such series as *Sightings* and *Encounters* for the Fox Television Network. Cowen has also produced and directed network television specials for HBO, A&E, ABC, NBC, CBS and FOX.

As a partner in Herzog Cowen Entertainment, Cowen has continued his behind-the-scenes career, serving as executive producer on projects for such films as *A Beautiful Mind*, *Pearl Harbor*, *Men in Black*, *Austin Powers*, *Training Day*, *The Mummy* and *Ocean's 11*. Most recently, Cowen served as co-executive producer on *The Real Roseanne Show* for ABC and was senior producer for the documentary television series *Military Diaries* for VH1. For the latter, he spent 40 days living on the USS John C. Stennis, an aircraft carrier, during Operation Enduring Freedom.

**HUGH MURRAY** (Executive Producer) has been with IMAX for 15 years and has been an integral part of the evolution of the technology for producing large format films in 3D. Murray designed the optical chain for the first IMAX 3D camera and has been part of the evolution of 3D cinematography at IMAX. He has worked on most IMAX productions in the past ten years as an expert in 3D, special effects and animation. He currently serves as Vice President, Technical Production for the company. Hugh was the instigator and is also a producer, along with Steve Hoban, of the computer animated film *Cyberworld*.

Murray led the team that identified the key technologies and designed the production pipeline for the IMAX DMR<sup>®</sup> process and has acted as the IMAX<sup>®</sup> producer on *Apollo 13* (with Lorne Orleans), *Star Wars: Episode II - Attack of the Clones* (with Lorne Orleans), *The Matrix Reloaded*, *The Matrix Revolutions* and the IMAX 3D version of *The Polar Express*.

Prior to joining Imax Corporation, Murray worked as a physicist for Xerox at their Canadian research center, where he worked on a range of projects from image analysis to graphical software development.

A native of Milwaukee, Wisconsin, **MARK HERZOG** (Executive Producer) grew up in a family of ten children before attending the University of Wisconsin, Madison, where he graduated with a BA in Theater and a BA in Communications. He immediately began his career in the entertainment industry in Chicago, working in television and commercial production, as well as on several Chicago filmed features (including Paul Shrader's *Light of Day* and John Hughes' *She's Having a Baby*).

While in Chicago, Herzog was also a member of an improvisational comedy troupe that performed for many years and whose members also included Joan Cusack and Bonnie Hunt.

After moving to Los Angeles in the late 1980s, Herzog spearheaded development for National Lampoon, specifically producing several anthology albums culled from the three years' worth of material from *National Lampoon's Radio Hour*.

Mark Herzog and Mark Cowen began their association at the marketing/television production company The Berkeley Group in the early '90s. Herzog headed up the marketing division, specifically producing television specials and behind-the-scenes programming for feature films, including *Apollo 13*, *Addams Family Values* and *Searching for Bobby Fischer*, to name a few.

In 1995, Herzog formed his own marketing company, Herzog Productions, which continued in behind-the-scenes programming for feature films, and later branched out into DVD bonus feature production, feature film website design and documentary television productions.

Herzog re-teamed with Mark Cowen on Cowen's feature-length documentary *We Stand Alone Together: The Men of Easy Company*, which was nominated for an Emmy. Together, they formed the marketing/television firm Herzog Cowen Entertainment, which they continue to jointly run.

Through Herzog Cowen Entertainment, Herzog is proud to donate his time and the efforts of the company toward a better understanding of foster care and adoption, specifically through the efforts of the Bruce Willis Foundation. Currently, Herzog lives in Pasadena with his wife Jane E. Russell, a feature film unit publicist, and their two children.

Almost immediately upon graduating from Ohio Wesleyan University with a BA in English, **CHRISTOPHER G. COWEN** (Writer / Associate Producer) began his career in entertainment with a production assistant position on the multiple Oscar®-nominated *Apollo 13*. Continuing his association with producer Brian Grazer, Imagine Entertainment and Universal Pictures, Cowen next worked in production on the feature films *Sgt. Bilko*, *The Chamber* and *Dante's Peak*.

Cowen then segued to cable television, working as assistant editor on the Discovery Channel series *The Eco-Challenge* and then as assistant to the directors on HBO's award-winning film anthology series *From the Earth to the Moon*—one of those directors being Tom Hanks. Cowen joined Hanks and Gary Goetzman as a creative executive of acquisition and development at the Playtone

Company in 1998 and worked on a myriad of Playtone projects, including *The Polar Express*, *My Big Fat Greek Wedding* and *Band of Brothers*.

*Magnificent Desolation: Walking on the Moon 3D* is Cowen's premiere large-format feature film writing and producing credit.

**JINI DÜRR** (Supervising Producer) has progressed quickly from visual effects producer to large format film producer.

She served as VFX Producer on one of IMAX's top grossing films, *T-Rex: Back to the Cretaceous*. She co-produced *Siegfried & Roy: The Magic Box*, which was recognized with a MAXI Award for the Best 3D film by the International Network of IMAX Theatres. Her extensive large format experience includes producing theme park attractions for Busch Entertainment such as *RL Stine's Haunted Lighthouse 4D*, directed by Joe Dante. She recently produced *Roar: Lions of the Kalahari* for National Geographic Film & Television, winner of the Best Large Format Film at the International Wildlife Film Festival.

Currently she is Supervising Producer on *Magnificent Desolation: Walking on the Moon 3D*, and is in development with National Geographic Film & Television on the 3D film *Sea Monsters*.

Dürr is an honorary adjunct professor in the film department at San Diego State University. She holds a Bachelor of Arts in Rhetoric from the University of California, Berkeley.

**WILLIAM SCHINSKI** (Editor) continues his long-term association with Cowen and Herzog on *Magnificent Desolation*, having served as a senior editor on documentaries for television and film and on DVD bonus material at Herzog Productions since 1999.

Schinski's television editing credits cover a variety of subjects for a wide range of clients, including: Cinemax (the special *Anchorman: Behind the News*), Fine Living Network (the one-hour special *Island Time*), A&E Biography (*Innovators*), Sci-Fi Channel (*Hulk: The Lowdown*), ABC (Roseanne Barr's primetime reality show *The Real Roseanne* and the half-hour special *Remember the Titans: An Inspirational Journey*), VH1 (*Military Diaries*), ESPN (the half-hour documentary *Size Does Matter: The Making of Ultimate X*) and Playtone (*Artists Against AIDS: The Making of 'What's Going On'*). He also served as co-producer/editor on *Pearl Harbor: Journey to the Screen*.

Schinski produced and edited bonus material on the DVD releases of such feature films as *Pearl Harbor*, *Narc* and *Femme Fatale*. He edited the short film *How to Be a Hollywood Player in Less Than 10 Minutes* for director Joe Hudson and director of photography Allen Daviau (*Van Helsing*) and provided additional editing on the award-winning documentary *We Stand Alone Together: The Men of Easy Company*.

*Magnificent Desolation: Walking on the Moon 3D* marks Schinski's editorial large-format feature film debut.

**SEAN MACLEOD PHILLIPS** (Director of Photography) has created memorable images in virtually every motion picture format—from national television commercials to IMAX, the world's largest 70mm film format. A creative leader in the digital revolution sweeping the industry, his strength has been fusing cutting-edge visual effects with film's oldest appeal—the emotional bond felt between the people in the audience and the people on the screen.

Phillips holds a degree in cinema/television from the University of Southern California. His student films won many awards, including an Achievement Award from the Academy of Motion Picture Arts and Sciences.

Phillips was hired out of film school to direct and photograph a series of successful visual effects television commercials for CMI in Los Angeles, garnering CLIO Recognition Awards as well as five New York Film and Television Awards, A BPA Silver Award and an ACE Award.

Over the last 12 years, Phillips has worked extensively in the emerging digital visual effects field for commercials, features and large format films. He has supervised visual effects for the national commercial campaigns of Miller Beer, American Express, Mitsubishi, Acura, Toshiba, US Sprint and Sharp. He supervised the visual effects for Imax's *T-Rex: Back to the Cretaceous*, which features photo-real 3D dinosaurs seven stories tall. Critics from *The New York Times* to *Variety* agreed that *T-Rex* successfully took *Jurassic Park* quality dinosaurs into 3D with the stunning resolution of the IMAX® format.

Phillips directed, photographed and supervised visual effects on *Technopia*, a motion-based adventure film that became the #1 smash hit of the '93 World Expo, screening continuously in the large format Iwerks theaters of the Goldstar Pavilion. Produced at Boss Film Studios in eight perf. 70mm, *Technopia* blends a live-action story with computer-generated images, miniatures and digital effects. *Technopia* has won Imagina and Telly Awards, and by popular demand plays permanently at the Expo site.

He directed and photographed the opening King Kong FX sequence for the IMAX film *Special Effects*, which received an Academy Award® Documentary Short nomination. More recently he served as the director of photography on *Thrill Ride*, as well as *Encounter in the Third Dimension* in IMAX 3D, which he also co-produced.

Sean was also the director of photography and visual effects supervisor on the groundbreaking IMAX 3D film, *Siegfried & Roy: The Magic Box*, for L-Squared Entertainment. *Magic Box* fuses dramatic live action and the Mirage stage show with the most elaborate, moving-camera virtual sets ever created in large format. *Magic Box* was honored with a MAXI award for best 3D picture and best 3D Cinematography by the vote of the International Network of IMAX Theaters. Sean is also a recipient of the Kodak Vision Award for Large Format Cinematography.

Phillips recently shot *RL Stine's Haunted Lighthouse*, a Busch Entertainment 3D theme park attraction for *Gremlins* director Joe Dante, and *Bugs!*, an IMAX 3D feature that won the Giant Screen Theatre Association's Award for Best Cinematography.

**CHARLES LEE** (Production Designer) has collaborated with some of the industry's most visionary directors while serving in a variety of designing capacities. As a production designer, Lee's feature film credits include David Twohy's thrilling horror mystery *Below*, Chris Roberts' *Wing Commander*, Brent Florence's *Solid Ones*, Kevin Dowling's *Mojave Moon*, and for Andrew Davis', the upcoming action thriller *The Guardian*, starring Kevin Costner and Ashton Kutcher.

Lee has collaborated twice with Oscar®-winning director James Cameron as supervising art director on the towering hit *Titanic* and as assistant art director on the blockbuster *True Lies*. Additional feature film designing credits include *In Dreams* (art director and set designer of underwater sequences), *Goldeneye* (art director), *Tank Girl* (supervising art director), *Silo 3 Jane* (art director).

For television, Lee also served as production designer on the telefeatures *The Pennsylvanian Miners Story*, *Georgetown*, *A Family in Crisis: The Elian Gonzalez Story* and Stephen Gyllenhaal's *The Warden*.

**JAMES NEWTON HOWARD** (Composer) is one of Hollywood's most versatile and prolific composers, with nearly 90 films to his credit. He has received six Academy Award® nominations, two Golden Globe nominations and one Grammy nomination. In addition, he has won 24 ASCAP Awards for film and television shows scored from 1994 to 2002. His credits include films as diverse as *The*

*Sixth Sense, Signs, The Fugitive, Pretty Woman, The Prince of Tides, Grand Canyon, Dave, Primal Fear, Glengarry Glen Ross, The Devil's Advocate and Dinosaur.*

Howard's more recent projects include the live-action *Peter Pan; Hidalgo*, starring Viggo Mortensen; M. Night Shyamalan's *The Village*, for which Howard received his sixth Oscar® nomination for Best Original Score; Michael Mann's *Collateral*; *Miss Congeniality 2: Armed and Fabulous*; Sydney Pollack's suspense thriller *The Interpreter*; and Christopher Nolan's *Batman Begins*, starring Christian Bale. Upcoming projects include *Freedomland* for director Joe Roth.

Howard attended the Santa Barbara Musical Academy of the West and the University of Southern California's School of Music. He completed his formal education with orchestration study under legendary arranger Marty Paich. Though his training was classical, he nurtured an interest in rock and pop. It was in his early work in the pop arena that he really honed his talents as songwriter, musician, arranger, producer and composer.

He spent two years doing session work for a variety of performers, from Carly Simon to Ringo Starr, and also recorded two solo albums. In 1975, he joined pop superstar Elton John's band on the road and in the studio doing orchestrations and string arrangements. Having become one of the most sought-after musicians in the industry as a songwriter, record producer, conductor, keyboardist and film composer, he racked up a string of collaborations in the studio with some of pop's biggest names, including Barbra Streisand, Randy Newman, Rickie Lee Jones, Chakha Khan, Olivia Newton-John, Earth Wind and Fire, Bob Seger, Rod Stewart and Glen Frey, among others.

### **About IMAX Corporation**

Founded in 1967, IMAX Corporation (NASDAQ: IMAX; TSX: IMAX) is the newest distribution platform for Hollywood content and one of the world's leading entertainment technology companies. IMAX delivers the world's best cinematic presentations using proprietary IMAX, IMAX® 3D, and IMAX DMR technology. IMAX DMR (Digital Re-mastering) makes it possible for virtually any 35mm film to be transformed into the unparalleled image and sound quality of The IMAX Experience. The IMAX brand is recognized throughout the world for extraordinary and immersive entertainment experiences. As of March 31, 2005, there were 250 IMAX theatres operating in more than 35 countries.

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### **About Lockheed Martin**

Lockheed Martin is a premier systems integrator principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services.

With growth markets in Defense, Homeland Security, and Systems/Government Information Technology, Lockheed Martin partners to help customers meet their defining moments as they address complex challenges of strategic and national consequence.

Headquartered in Bethesda, Maryland, Lockheed Martin employs 130,000 people worldwide. Distinguished by whole-system thinking and action, a passion for invention and disciplined performance, Lockheed Martin strives to earn a reputation as the partner of choice, supplier of choice and employer of choice in the global marketplace.

Lockheed Martin's operating units are organized into five broad business areas with diverse lines of business.

- Electronic Systems: missiles and fire control, maritime systems/sensors, and platform integration, training and transportation solutions lines of business.
- Aeronautics: tactical aircraft, airlift, and aeronautical research and development lines of business.
- Space Systems: space launch, commercial satellites, government satellites, and strategic missiles lines of business.
- Information & Technology Services: federal services, energy programs, Information Technology solutions and aeronautical services lines of business.
- Integrated Systems & Solutions formed in 2003 with Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), strategic architectural design and integration, mission management, and modeling/ simulation lines of business.

Through its diverse systems, technologies and services, Lockheed Martin and its heritage companies have been dedicated to America's space program from its inception. From the earliest days of rocketry to planetary spacecraft to the Hubble Space Telescope, Lockheed Martin's team of scientists, engineers and support personnel are committed to furthering our knowledge of this planet and beyond.

For more information, visit [www.lockheedmartin.com](http://www.lockheedmartin.com).

### **About NASA**

**The National Aeronautics and Space Administration** (NASA) conducts research for the solution of problems of flight within and outside the Earth's atmosphere and develops, constructs, tests, and operates aeronautical and space vehicles. It conducts activities required for the exploration of space with manned and unmanned vehicles and arranges for the most effective utilization of the scientific and engineering resources of the United States with other nations engaged in aeronautical and space activities for peaceful purposes. The National Aeronautics and Space Administration was established by the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2451 et seq.).

NASA is an investment in the future. As explorers, pioneers and innovators, the people of NASA boldly expand frontiers to inspire and serve America and to benefit the quality of life on Earth.

For more than 45 years, NASA has held an unparalleled record of accomplishment in science, aeronautics, and space exploration. Our groundbreaking work focuses on four major areas: scientific research and development, human space flight, robotic space exploration and aeronautics. NASA personnel are currently designing the next generation spacecraft that will take humans back to the Moon and on to Mars; living and working in space aboard the world's only orbiting laboratory; using probes to explore Mars, Saturn, and the edge of the solar system; pushing the envelope in aeronautics research; and peering through telescopes to glimpse the beginning of time.

On January 14, 2004, President George W. Bush proposed the Vision for Space Exploration, a new directive with a fundamental goal to advance our nation's scientific, security and economic interests through a robust program of human and robotic exploration. The Vision for Space Exploration commits NASA to a journey of exploring the solar system and beyond. This journey begins by returning the Space Shuttle safely to flight and completing construction of the International Space Station, with the ultimate goal of returning to the Moon and establishing a permanent human presence beyond the confines of Earth.

NASA will take America and the world to new frontiers, creating countless opportunities and possibilities for mankind, as the agency continues its quest to explore, discover and understand.

For more information on NASA, please visit [www.NASA.gov](http://www.nasa.gov).

### **About IMAX 3D**

IMAX 3D is unlike any of the traditional 3D films of yesterday. It combines the unique properties of The IMAX Experience, breathtaking crystal clear images projected on giant screens up to eight stories tall and 120 feet wide which are enhanced with a state-of-the-art digital surround sound system, with IMAX's special polarized 3D glasses. *Magnificent Desolation: Walking on the Moon 3D* creates a truly immersive environment that will transport audiences from the theatre to the Moon.

An IMAX 3D projector projects 48 individual images onto the screen every second. To create the superlative 3D effect, it actually projects two separate images onto the screen and special polarized IMAX 3D glasses allow your brain to fuse the two images together to make a single pristine, larger-than-life, three-dimensional image. The 3D images in an IMAX theatre will reach out at you no matter where you sit, making every seat the best seat in the house.

The IMAX 3D screen is covered with a special silver paint that reflects twice the amount of light as a regular movie screen. It has thousands of tiny holes in it, that allow sound to pass through the 3D images and into the audience. The backgrounds in IMAX 3D films reach just as far beyond the screen as the foreground images reach in front of the screen, creating the illusion that the screen has disappeared.

### **ABOUT IMAX 3D TECHNOLOGY**

The IMAX Experience<sup>®</sup> in 3D, the world's most immersive movie experience, has entertained and enlightened millions of people worldwide. With crystal clear, larger than life, 3D images complimented by exhilarating state-of-the-art surround sound, audiences feel as though they are in the movie.

The high quality of all aspects of the IMAX 3D experience makes IMAX 3D presentations the world's best, providing the most realistic and immersive 3D ever. One key factor behind the magic of IMAX 3D is the implementation of dual filmstrip technology. This technology is far superior to the old fashioned "red-blue" anaglyphic 3D, which combines left- and right-eye images onto a single strip of film, compromising sharpness and color. IMAX 3D technology eliminates this compromise and enhances the images by not only using the world's largest film format (15/70mm), but also by using two separate strips of film for both image capture and projection.

### **The IMAX 3D Camera**

The IMAX 3D camera is one of the highest resolution image-capturing devices in the world. By simultaneously recording separate left- and right-eye images onto two 65mm wide film strips, one for each eye, the IMAX 3D camera helps to

create spectacular high resolution images characteristic of the wide field of view of IMAX presentations.

### **The IMAX 3D Projector**

The IMAX 3D projector simultaneously projects two strips of 15/70 film, one for each eye, onto a special silver IMAX 3D screen. Each member of the audience must wear IMAX 3D glasses, which channel the right-eye image to the right eye and the left-eye image to the left eye. Some IMAX theatres use P3D glasses, which have polarized lenses that separate the left- and right- eye images. Other theatres use E3D glasses, which utilize electronic liquid crystal shutter technology. The 15/70 film format used by IMAX is ten times larger than a conventional 35mm film and three times larger than a standard 70mm film. The sheer size of a 15/70 film frame, combined with the unique IMAX projection technology, is the key to the extraordinary sharpness and clarity of films exhibited in IMAX theatres.

### **The Theatres**

IMAX theatres' specialized design and unobstructed views place audiences right in the on-screen action. Large IMAX 3D screens, up to eight stories high, eliminate the discomfort and decapitated edges of smaller-format 3D systems. The screen, coated with a specialty high-performance metallic paint, has a slight curvature that extends beyond the field of geometric recognition incorporating some of the audience's peripheral vision, enhancing audience members' feelings of being in the film. The images are enhanced by a state of the art digital surround sound system.

### **The Films**

IMAX 3D films take viewers on fantastic journeys to places far beyond the reach of most people, through films such as *NASCAR 3D: The IMAX Experience* or *SPACE STATION*, narrated by Tom Cruise. Exceptional 3D computer generated animation can be experienced in films such as *The Polar Express: An IMAX 3D Experience*, Steve Oedekerk's *Santa vs. the Snowman* and IMAX's *Cyberworld*.

### **IMAX 3D Polarized Glasses (P3D)**

In theatres utilizing polarized 3D technology, each member of the audience wears custom-designed polarized IMAX 3D glasses with oversized lenses. The polarized projection system uses a carefully-aligned polarized filter in front of each projector lens, with the two lenses having a different alignment. The glasses' lenses are carefully aligned to the respective eye of the projector. The glasses channel only the right-eye image to the right eye and the left-eye image to the left eye, delivering the stunning, full color, 3D images.

### **IMAX 3D Electronic Liquid Crystal Shutter Glasses (E3D)**

In theatres utilizing electronic 3D technology, each member of the audience wears electronic liquid crystal shutter glasses. Used to show left- and right-eye images of each scene, IMAX E3D glasses sense an infrared signal from the projection system. The projector projects left- and right-eye images sequentially without overlap. Viewers wear glasses with shutters that alternately open and close 48 times per second, allowing each eye to see the appropriate image. Because the glasses and projector are accurately synchronized, the correct image is always channeled to the appropriate eye.

*—magnificent desolation—*