Apple Event

Company Participants

- Angellina Kyazike, Engineering Program Manager at Apple
- Colleen Novielli, Global Product & Marketing
- Francesca Sweet, Worldwide iPhone Product Marketing Manager
- John Ternus, Senior Vice President of Hardware Engineering
- Johny Srouji, Senior Vice President of Hardware Technologies
- Nicole Kordes, Product Design Engineering Project Manager
- Timothy D. Cook, Chief Executive Officer, Director

Presentation

Timothy D. Cook {BIO 14014370 <GO>}

Good morning and welcome back to Apple Park. Thank you for joining us for our first event of 2022. Today, we have some great announcements to share. We've been working hard to deliver new products and services that help you stay connected, productive and entertained. So let's start with Apple TV+.

Like many of you, I've been watching a lot of shows and movies with the time I've been spending at home. Along with our great original series, like Ted Lasso, The Morning Show, For All Mankind, Servant, and the Afterparty, we're working with some of the most imaginative filmmakers in the world and making great original movies as well like the emotional powerhouse Swan Song featuring a riveting performance by Mahershala Ali, who earned a lead actor nomination from the prestigious BAFTAS. Joel Coen's The Tragedy of Macbeth starring Denzel Washington and Frances McDormand, this beautiful film was nominated for three Academy Awards including best actor. Remarkably this is Denzel's 10th Academy Award nomination. And CODA, which was also nominated for three Academy Awards including best picture. CODA is a powerful and inspiring story, which broke barriers with its predominantly deaf cast including Troy Kotsur, who became the first deaf male actor to be nominated for an Oscar.

Now let's take a quick look at these Apple original films and some more incredible ones coming soon. (Video Presentation) We hope you will love these amazing movies as much as we do. They bring drama, suspense and joy to our lives. And with Apple TV+, we're always looking for new ways to bring more of this to you. And with that in mind, we've got something exciting to share. (Video Presentation) Introducing Friday night baseball on Apple TV+. Tune in on Friday nights for two games you can only see on Apple TV+. We're really excited about this. This is going to be the best way to watch baseball on your iPhone, iPad, Mac and anywhere that Apple TV+ is available. And now, let's turn to our products, starting with iPhone.

IPhone 13 is incredible. It features our powerful A15 Bionic chip. And together with iOS 15, the world's most advanced mobile operating system, iPhone 13 delivers experiences like cinematic mode, ProRes video, provides all day battery life and power stunning graphics on the immersive Super Retina XDR display. In addition to all of its great capabilities, people also love the design of iPhone 13 and its wide range of beautiful colors. So today we are introducing two gorgeous new finishes. (Video Presentation)

IPhone 13 looks stunning in this bold new green with its precision milled back glass and color matched aluminum edges. And iPhone 13 Pro in a sophisticated new Alpine green joins the most Pro lineup we've ever created. You can pre-order these new models starting this Friday and they will be available on March 18. Now let's talk about Apple silicon. The development of Apple silicon was inspired by iPhone and has delivered cutting edge performance and capabilities for many years. It continues to have a phenomenal impact on our products and the industry.

In addition to industry leading performance per Watt, Apple silicon delivers many other advancements. The custom build image signal processor drives our dynamic camera experiences. The Neural Engine unlocks breakthrough machine learning capabilities. The Secure on Play protects the biometric information used in Face ID and touch ID. These are just a few of the innovations enabled by Apple silicon that makes our products such a huge hit with customers. And today, we're bringing our extraordinary A15 Bionic chip to another iPhone. (Video Presentation) The new iPhone SE.

From the very beginning, we designed iPhone SE to include some of our most advanced features and technologies while delivering the iPhone experience at an incredible price. This is important for our existing users who want a smaller iPhone and a great value. It's also been an incredibly popular model with new iPhone users and we're continuing to add new users to iPhone at a faster pace. In fact, this past fall, we've added more new users to the iPhone 13 lineup than in each of the previous five launches and we're excited for the iPhone SE to build on this momentum.

Now here's Francesca to tell you more.

Francesca Sweet {BIO 19151290 <GO>}

(Video Presentation) At the heart of iPhone SE is A15 Bionic, the same chip as an iPhone 13. Bringing this level of performance to our most affordable phone is something only Apple can do. A15 Bionic makes nearly every experience better from simple things like launching apps, growing through photos, to intense workloads like processing, depth information on the fly. A15 Bionics packs a powerful 6 core CPU to handle demand and cast smoothly and efficiently. It's up to 1.8 times faster than iPhone 8 and even faster compared to older models. This CPU is faster than all the competition at any price. The 4-core GPU is great for graphics intensive use cases and delivers a monumental improvement for people upgrading. That means when you buckle up for race in Apple Arcade's next big release, Gear.Club Stradale, the

realistic graphics make you feel just like you're on the roads of Tuscany behind the wheel of your dream car.

Apps can take advantage of the 16-core Neural Engine perfect from machine learning task and capable of 15.8 trillion operations per second, which is 26 times faster than iPhone 8. And if you're upgrading from a phone without a Neural Engine, it unlocks new ways to use your iPhone that make your life easier like live text, point your camera at text and with the tap you can copy it, translate it, make a call or send an email. iPhone SE isn't just powerful. It's beautiful too. It features iconic glass and aluminum design in three fantastic colors, midnight, starlight, and product red. It has a 4.7-inch Retina HD display with incredible color accuracy. The display is even more protected by the durable design, which now includes the toughest glass in a smartphone on both the front and back.

This is the same glass as the back of iPhone 13 and iPhone 13 Pro. And with IP67 water and dust resistance, iPhone SE is designed to last. iPhone SE has the home button with touch ID for a secure, private and easy way to unlock your iPhone, fill in passcodes, and make purchases with Apple Pay. iPhone SE has even better battery life. With the efficiency of A15 Bionic, integration with iOS, our latest battery chemistry and internal design update. And we're bringing 5G to our most affordable iPhone. So iPhone SE can take advantage of the latest generation of technology. You get super-fast downloads and uploads, lower latency and better experiences in more place like seeing family with higher quality HD FaceTime calls even when you aren't on WiFi or enjoying your favorite movies with friends using Share Play or playing multiplayer online games.

IPhone SE also has some of our latest camera innovations. The 12-megapixel camera and A15 Bionic create a new camera system that enables powerful computational photography. Deep Fusion optimizes for texture and detail in every part of the photo. Smart HDR 4 applies individual adjustments for color, contrast, and noise to subjects and the backgrounds. Photographic styles brings your preferred style automatically to the image pipeline during capture while preserving skin tones. The ISP in A15 bionic improves video quality for truer skin tones and reduced noise, especially in lower light. iPhone SE comes with all the incredible benefits of iOS 15, including new features like focus to help reduce distraction to be in the moment and an all-new Maps experience. And you'll get intelligent capabilities that protect your privacy like on device Siri and on device dictation that just weren't possible with older phones.

IPhone SE will get the latest iOS updates for years to come. iPhone SE continues our commitment to minimize the impact on the environment. Like we did with iPhone 13, we eliminated the outer plastic wrap from our packaging and we used recycled materials in the design of iPhone SE, like in the Taptic Engine where we use 100% recycled rare earth elements and 100% recycled tungsten. iPhone SE is a fantastic new iPhone that brings the performance of A15 Bionic, the speed of 5G, better durability, better battery life, and advanced new camera capabilities. And it starts at just $429. Pre-orders start this Friday and iPhone SE will be available on March 18.

Now back to Tim.

Timothy D. Cook {BIO 14014370 <GO>}

The new iPhone SE brings the advanced features and exceptional performance of A15 to our most affordable iPhone. It's going to be great for existing iPhone users who want a highly capable and compact iPhone and for new users who want to experience iPhone for the first time. Apple silicon is a huge part of the success of another remarkable product and that's iPad. The unmatched performance and efficiency of Apple silicon enables iPad's magical experience from its versatility and portability, to its exceptionally long battery life. It makes iPad the most powerful device of its kind and even faster than the vast majority of PC notebooks.

We have a fantastic iPad lineup. And today I'm excited to talk about iPad Air. We love iPad Air for being incredibly thin, light and powerful. And now we're taking its performance to the next level. (Video Presentation) This is the new, even more amazing iPad Air. And to tell you all about it, here's Angelina.

Angellina Kyazike

The incredibly popular design of iPad Air is super-charged with the power of Apple silicon, so let's jump right in and talk about performance. Whether you're a college student taking elaborate notes, a content creator working on your latest project, or a gamer playing the hottest titles, great performance is a key reason users choose iPad Air. So the new Air takes a massive leap in performance, because we're bringing the breakthrough M1 Chip to iPad Air. That's right. This is the same M1 chip that we brought to iPad Pro. The 8-core design of the CPU delivers up to 60% faster performance over the A14 in the previous generation of iPad Air. And M1's 8-core GPU delivers amazing graphics performance, which is up to twice as fast. In fact, M1 in the new iPad Air makes it faster than the fastest competitive tablet. And the new Air is also up to two times faster than the best selling Windows laptop in its price range, a device that is three times thicker and four times heavier than iPad Air.

So for users doing things like drawing a filter for a social media post with Procreate, or designing the ultimate kid's bedroom in SketchUP, the new Air will fly right through it. And with M1, the new Air becomes a mobile gaming powerhouse. And machine learning workflows are enhanced by the incredible 16-core Neural Engine, enabling powerful and intuitive experiences. Like using Adobe Lightroom to intelligently select the sky from the foreground with just a tap so you can edit seamlessly. And these experiences really come to life on the Air's gorgeous Liquid Retina display with its P3 wide color, True Tone, 500 nits of brightness, and anti-reflective coating.

Another big update for iPad Air is the front camera, because it will now feature a 12-megapixel Ultra Wide camera, which means it supports Center Stage. This has been hugely popular for connecting with friends, colleagues, and loved ones. And this means that now all iPad models feature Center Stage. Next, with its ultra portable design, we know users need fast wireless connectivity when they're on the go. That's why we're bringing ultra-fast 5G to iPad Air, perfect for when you're doing things like

using SharePlay to watch movies with your friends wherever you are. And to support fast connection to drives, docks, and cameras, we're increasing the performance of the USB-C port. It is now twice as fast, so transferring large photos or videos is even quicker. And iPad Air is compatible with amazing accessories that make it even more versatile, like the Smart Keyboard Folio and Magic Keyboard, which delivers a fantastic trackpad and typing experience.

IPad Air also supports Apple Pencil second generation, which users absolutely love for drawing and taking notes. And of course, driving the entire iPad experience is iPadOS. iPadOS 15 is packed with powerful new features like enhanced multi-tasking, Quick Note, and SharePlay, which make iPad even more capable. And with the new version of Swift Playgrounds, users can build and submit apps to the App Store right on iPad. A new release of iMovie is perfect for aspiring filmmakers working on their latest masterpiece or for users who are just getting started. The new storyboards feature helps users create finished videos by using curated shot lists, transitions, and music for a polished result. It's a great new release that will be available next month. And we continue our commitment to the environment. The new Air has a number of components with 100% recycled materials, like the aluminum in the enclosure, tin in the solder of the main logic board, and rare earth elements in the enclosure and audio magnets. We're really excited about the new iPad Air. Let's take a look. (Video Presentation)

So this is the new iPad Air. And it comes in a gorgeous array of colors, Space Gray, Starlight, Pink, Purple, and a stunning new Blue. It will be available starting at the same great price of $599. This is an incredible price for such a powerful device. It comes in both 64 gigabyte and 256 gigabyte configurations and it will be available in both Wi-Fi and cellular models. You can begin ordering Friday and it will be available March 18. With the supercharged performance of M1, ultrafast 5G, and Center Stage, we think you're going to love the new iPad Air. Back to Tim.

Timothy D. Cook {BIO 14014370 <GO>}

With the addition of M1, iPad Air is now more powerful, more capable, and simply more fun than ever. Next, let's talk about the Mac. Apple silicon has transformed the Mac over this past year. Its incredible performance, custom technologies, and cutting-edge power efficiency have ushered in a new era for the Mac. We've transitioned nearly every product in the Mac lineup to Apple silicon. And each of these products has blown away users and shocked the PC industry. When we introduced the MacBook Pro and MacBook Air with M1, our customers no longer had to choose between incredible performance and amazing battery life. They could have it all. And Apple silicon has enabled us to design products we never could have imagined before, like the remarkably thin and powerful new iMac made possible by M1.

And the newest MacBook Pro with M1 Pro and M1 Max has completely redefined what pros expect from a notebook. It simply has no equal. Customers are absolutely loving these systems. In fact, every quarter since we started shipping M1-based Macs has been record-breaking and we've outpaced the industry growth during this time.

And we're not stopping there. To tell you how we're going to take Mac even further, here's John.

John Ternus {BIO 22135753 <GO>}

Apple silicon has had a profound impact on the Mac. Every chip in the M1 family has been groundbreaking, allowing us to make the world's best personal computers for our users. And now we're going to take the next giant leap. Because today we're bringing Apple silicon to users who need even more extreme levels of performance to unleash their creativity. We're adding one last chip to the M1 family, and it's going to blow your mind. Here it is. (Video Presentation) Introducing M1 Ultra. It is a monster of a chip. And it brings breathtaking levels of performance to the Mac desktop. So let me hand it over to Johny to tell you more about its incredible architecture.

Johny Srouji {BIO 19052877 <GO>}

M1 Ultra is the next breakthrough for Apple silicon. So far, we've scaled Apple silicon for the Mac from M1 to M1 Pro to M1 Max. And with each chip, we've extended the architecture to deliver phenomenal performance, while maintaining remarkable power efficiency, and scaling the unified memory architecture. This approach has also provided a consistent developer programming model across the M1 family. And now we want to take Apple silicon even further to achieve more extreme levels of performance for the desktop.

The challenge is that there are physical limitations in creating a larger die than M1 Max. The leading approach is to use two chips and connect them via the motherboard. However, that approach has significant tradeoffs, including increased latency, reduced bandwidth and much higher power consumption. This also burdens developers with the need to change their code for this architecture. So with M1 Ultra, we did something truly groundbreaking. And it actually starts with M1 Max, the most powerful SoC we've built to date. With its high-performance CPU, massive GPU, and tremendous unified memory bandwidth, M1 Max is incredibly capable, and its amazing performance is delivered while maintaining industry-leading power efficiency. Yet it's even more capable than what we've shared.

You see, M1 Max has a secret. A hidden feature we haven't talked about until now. It has a groundbreaking die to die interconnect technology that allows us to scale even further by building M1 Ultra from two M1 Max die, which doubles performance. And we connect the two die with our innovative, custom-built packaging architecture. This multi-die architecture is way ahead of anything else in the industry, and we call it UltraFusion. The UltraFusion architecture uses a silicon interposer that has twice the connection density of any technology available.

It connects over 10,000 signals and provides an enormous 2.5 terabyte per second of low latency, inter-processor bandwidth between the two die using very little power. That's more than four times the bandwidth of the leading multi-chip interconnect technology. The result is an SoC with blazing performance due to low latency, massive bandwidth, and incredible power efficiency. And thanks to the

magic of the UltraFusion architecture, it behaves like a single chip to software and preserves the benefits of the unified memory. M1 Ultra has 114 billion transistors. That's seven times more than M1. It's the most ever in a personal computer chip. And when you add it to the M1 family, you can see the huge difference in area between M1 and M1 Ultra.

This multi-die architecture also supports a higher bandwidth memory subsystem. In fact, with two die, the memory bandwidth is increased to a massive 800 gigabyte per second. That's more than 10 times the latest PC desktop chip. And doubling the memory channels also means M1 Ultra supports up to a staggering 128 gigabytes of unified memory for enormous workloads. M1 Ultra also offers an unbelievable amount of compute performance. It has a powerful 20-core CPU with 16 high-performance cores and four high-efficiency cores to crush CPU intensive tasks. It also features a huge 64-core GPU, so it can speed through the most intense graphic tasks. It's nearly 8 times faster than M1.

M1 Ultra has 32 powerful Neural Engine cores that can run up to 22 trillion operations per second to accelerate the most formidable machine learning tasks. And it has twice the capabilities of the amazing Media Engine in M1 Max for unprecedented ProRes video encode and decode throughput. Power efficiency affects the entire system, including enclosure design, thermals, acoustics, and, ultimately, performance. So the industry leading performance per watt of M1 Max and M1 Ultra is a huge advantage for a desktop. M1 Max delivers similar multithreaded CPU performance to the latest 10-core PC desktop chip while using 65% less power. And when we compare M1 Ultra to the fastest 16-core PC desktop chip available, it delivers 90% higher performance in the same power envelope. And M1 Ultra can deliver the PC chip's peak performance while using an astounding 100 watts less power. When we look at GPU performance and power, M1 Max delivers similar performance to one of the most popular GPUs while using one-third the power. And M1 Ultra delivers faster performance than the highest-end GPU available while using 200 watts less power.

M1 Ultra provides industry-leading desktop class performance and power efficiency, allowing us to deliver incredible performance in a much smaller, more efficient design. So that's the groundbreaking M1 Ultra. It's the most powerful and capable chip ever for a personal computer. Now, back to John.

John Ternus {BIO 22135753 <GO>}

M1 Ultra takes Apple silicon further than ever. It's another game-changing chip for our pro users. Now, one of the things that makes Apple silicon so unique is how tightly it integrates with the operating system. This integration enables macOS to scale with M1 Ultra, allowing it to automatically benefit from M1 Ultra's immense capabilities, delivering another big step forward in performance. It also enables us to deliver an amazing experience for our users. Everything is super fast and incredibly responsive, and the system and user data are protected with industry-leading security. The transition to Apple silicon has delivered the largest collection of apps ever for Mac, including iPhone and iPad apps, which can now run on Mac, and universal apps that unlock the full power of the M1 family.

And new apps with unbelievable performance continue to be released every week. We're thrilled with how well this transition is going. And because M1 Ultra looks like a single piece of silicon to software, apps will benefit from its extraordinary capabilities without any additional work. Let's hear what some of our developers have to say about it. (Video Presentation) The combination of M1 Ultra and macOS cranks up the performance of Mac yet again. So now let's talk about where we're going to use this incredible new chip. Today, we're going to focus on the place where so many people create their life's best work, the studio. A studio is where creators like designers, scientists, and developers change the world. Whether it's in a home or an office, each studio is unique, customized with the tools that complete the user's workflow, and for many, the Mac plays a pivotal role in this space. With the transition to M1, we've provided these users with two great desktops, iMac and Mac mini, which have remarkable performance and entirely new capabilities. Yet there are some users who want even more so they can push the limits of their creativity.

First, they want breakthrough performance and capability to turn their studio into a creative powerhouse. Next, they want a wide range of connectivity for peripherals that are key to their studio workflow. And finally, many want a modular system and display so they can create their perfect setup. So that's what we're introducing today, something totally new that gives our users exactly what they need to build the studio of their dreams. And here it is. (Video Presentation)

This is Mac Studio and Studio Display. Mac Studio is an entirely new Mac with the unbelievable performance of our most powerful Apple silicon, M1 Max and M1 Ultra. And the Studio Display is the perfect complement to Mac Studio, with a phenomenal set of features and that integrated experience Mac users love. So let's dive in, starting with Mac Studio. And to tell you all about it, here's Colleen.

Colleen Novielli

Mac Studio is a breakthrough in personal computing. It's unlike anything you've ever seen before. It's the first computer to put outrageous performance, extensive connectivity, and entirely new capabilities into an unbelievably compact form that lives right on your desk, where it's always within easy reach. Mac Studio is going to completely transform studio workflows everywhere. Let's start with its design.

With the power and efficiency of Apple silicon, we were able to totally reimagine what a high-performance desktop could look like. The exterior is machined from a single aluminum extrusion, with a footprint of just 7.7 inches square and height of only 3.7 inches, so it takes up very little space and fits perfectly under most displays. Inside, every element was designed to produce an unprecedented amount of performance in such a small form factor. The innovative thermal system begins with a unique double-sided blower pulling air into the system, across the entire circumference of the perforated aluminum base.

The air moves over the custom circular power supply and through channels precisely placed to guide it to the chip's thermal module. Finally, the air is propelled through a low-impedance rear exhaust containing over 2,000 precisely-machined perforations.

And due to the efficiency of M1 Max and M1 Ultra, the sound is so minimal. For most workloads, you'll barely even hear it. With this remarkably compact and quiet system within arm's reach, you get easy access to essential connectivity throughout the day. So next, let's take a look at the high-performance I/O Mac Studio provides.

On the back, there are four Thunderbolt 4 ports to connect displays and high-performance devices, a 10 Gigabit Ethernet port, two USB-A ports, an HDMI port, and a pro audio jack for high-impedance headphones or external amplified speakers. WiFi 6 and Bluetooth 5 are built in as well. And since many users frequently connect and disconnect devices, like portable storage, we also put connectivity on the front, for even easier access. Systems with M1 Max have two USB-C ports, providing 10 gigabits per second USB-3 data transfer. And with M1 Ultra, these ports are Thunderbolt 4, with up to 40 gigabits per second data transfer speeds. There's also an SD card slot to easily import photos or video. And Mac Studio offers extensive display support, for up to four Pro Display XDRs, plus a 4K TV, driving nearly 90 million pixels. With this wide array of advanced connectivity, you can configure your studio to your exact needs.

Now let's take a look at the unprecedented performance Mac Studio will deliver. When you compare Mac Studio to our most powerful Mac desktops, the 27-inch iMac and Mac Pro, it takes performance to astonishing new heights. Let's start with Mac Studio with M1 Max. For CPU performance, Mac Studio with M1 Max is up to 2.5 times faster than the fastest 27-inch iMac, and its upto 50% faster than Mac Pro with a 16-core Xeon processor, our most popular configuration. Graphics performance on Mac Studio with M1 Max is also tremendous. It's up to 3.4x faster than the fastest graphics on the 27-inch iMac. And it even outperforms Mac Pro with its most popular graphics card. Mac Studio is over three times faster.

Mac Studio with M1 Max is the high-performance machine many of our users have been waiting for to take their workflows to the next level. And Mac Studio with M1 Ultra takes performance to a whole other dimension. The CPU performance on Mac Studio with M1 Ultra is up to 3.8 times faster than the fastest 27-inch iMac. And it's up to 90% faster than Mac Pro with 16-cores. We can even compare Mac Studio with M1 Ultra to Mac Pro with 28-cores. It's up to 60% faster. That is incredible. And graphics performance on Mac Studio with M1 Ultra just crushes 27-inch iMac. It's up to a remarkable 4.5 times faster. It even exceeds Mac Pro with its fastest graphics card. Mac Studio is up to 80% faster.

Now, in the same way that MacBook Pro shattered the limits of graphics memory in a laptop, Mac Studio will do the same for the desktop. The most powerful workstation graphics card available today offers 48 gigabytes of video memory. With M1 Max, you can access up to 64 gigabytes of unified memory. And with M1 Ultra, you get up to 128 gigabytes of unified memory for enormous graphics tasks. No other graphics card comes close. And when it comes to storage, the SSD in Mac Studio delivers up to a super fast 7.4 gigabytes per second of performance and up to 8 terabytes capacity.

Today, more and more cameras are capturing ProRes video, from the iPhone 13 Pro to the Sony Venice cinema camera. With M1 Ultra's extraordinarily powerful Media Engine, Mac Studio can play an unprecedented 18 streams of 8K ProRes 422 video. There is no other computer in the world that can do this. To sum up this game-changing performance, Mac Studio with M1 Max is up to 3.4 times faster than our fastest iMac. It's a huge upgrade for 27-inch iMac users looking to move to more powerful Apple silicon. And for those looking for the most extreme performance, Mac Studio with M1 Ultra is up to 80% faster than our top of the line Mac Pro.

So now let's take a look at how this unprecedented performance is going to transform the studio. With the breakthrough capabilities of Mac Studio, users can completely reimagine their workflows and push their creativity further than ever. For musicians, Mac Studio powers the digital audio workstation they've been dreaming of. They can bring their most complex compositions to life with hundreds of tracks, plug-ins, and virtual instruments all played in real-time. 3D studios have new, breakthrough capabilities with Mac Studio. Artists can now interact fluidly with more extreme geometry and run complex particle simulations in a fraction of the time. They can even work with massive environments that were previously impossible to render.

For software development studios, Mac Studio is an absolute monster. Engineers can now build new versions of their code in warp speed and run more automated integration and testing than ever. Mac Studio brings staggering performance to the photo studio. Photographers can capture and edit huge gigapixel images composited with hundreds of layers, and export final images for publish in a flash. And Mac Studio is a powerhouse system for video studios. Colorists can add more corrections to their project while maintaining fluid playback. Editors working on multi-cam projects can play more streams of 8K video than ever before. And encoding video for final delivery is faster than ever. The performance and capability that Mac Studio brings to so many studios is going to change everything. There's never been a desktop like it.

And when it comes to the environment, Mac Studio raises the bar yet again. It uses far less energy than competitors to deliver its extraordinary performance. Over the course of a year, Mac Studio will use up to 1,000 kilowatt-hours less energy than a high-end PC desktop. Mac Studio is also free of numerous harmful substances. It uses 100% recycled rare earth elements in the magnets and recycled tin in the solder of the main logic board. So that's Mac Studio, featuring M1 Max and the new M1 Ultra, the most powerful chip ever built for a personal computer. Mac Studio will supercharge the workspace with breathtaking performance, unleashing your creativity like never before. Now, we designed Mac Studio together with the Studio Display, to complete the ultimate studio experience. And to tell you more, here's Nicole.

Nicole Kordes

The Studio Display is in a class of its own. Along with a gorgeous screen, it's loaded with incredible features that no other desktop display can deliver. And it provides that integrated experience Mac users love. Let's start with the design. Studio Display

has an all-screen design with narrow borders. Its all-aluminum enclosure houses an advanced set of features in a slim profile, and the stand allows you to tilt the display up to 30 degrees. To customize Studio Display for your workspace, you can also choose a tilt- and height-adjustable stand option, which has a counterbalancing arm that makes the display feel weightless.

There's also a VESA adapter option that lets you mount the display in landscape or portrait orientation. Studio Display features an expansive screen that has a 27-inch active area with a total of 14.7 million pixels at 218 pixels per inch, making it a 5K Retina display. And with 600 nits of brightness, P3 wide color, and support for over a billion colors, it brings images to life with spectacular detail. It also has True Tone for a more natural viewing experience, plus an industry-leading anti-reflective coating, for better comfort and readability. And for studios with bright light sources, there's an innovative nano-texture glass option that scatters light to further minimize glare, while delivering outstanding image quality.

Another thing that makes Studio Display unique is the fact that it actually has an A13 Bionic chip inside, which enables it to deliver amazing experiences with a highly advanced camera and audio system. There's a 12-megapixel Ultra Wide camera, which is the same sensational camera that's been a huge hit on iPad. And powered by the incredible technology in Apple silicon, it supports Center Stage, which comes to the Mac for the very first time, so video calls are so much more engaging. And to make this the ultimate video conferencing display, it also includes an array of studio-quality mics. They have an especially low noise floor for crystal-clear calls.

Studio Display also features a high-fidelity six-speaker sound system that delivers an unbelievable listening experience. It has four force-cancelling woofers that minimize distortion and produce bold, articulate bass and two high-performance tweeters that create accurate mids and crisp highs. And because Apple silicon can process multi-channel surround sound, the speakers also support Spatial Audio for music and video with Dolby Atmos, creating a truly cinematic viewing experience. Simply put, these are, by far, the highest fidelity speakers we've ever created for the Mac. And this is the best combination of camera and audio ever in a desktop display.

Next, let's talk about how Studio Display connects with your other devices. It has three USB-C ports that deliver speeds up to 10 gigabits per second. So you can connect peripherals, storage, and networking right into the display. And there's a Thunderbolt port, which allows you to connect Studio Display and any plugged in peripherals to your Mac with a single cable. That same cable delivers 96 watts of power, which allows you to charge any Mac notebook, and it can even fast charge a 14-inch MacBook Pro. And you can connect up to three Studio Displays to your MacBook Pro, creating an incredible edit bay or 3D animation studio.

Finally, to complete your setup, we've added a new silver and black color option to the Magic Keyboard with Touch ID, the Magic Trackpad, and the Magic Mouse, which beautifully complement the design of the display. Studio Display has also been designed to minimize its environmental impact. It uses 100% recycled rare earth elements in all magnets and is free of numerous harmful substances. It also meets

our high standards for energy efficiency. So that's the all-new Studio Display. No other display has this unique offering of 5K Retina resolution and advanced camera with Center Stage and incredibly high fidelity audio, all in a refined, aluminum design. And it's a great display to pair with any Mac, like MacBook Pro, MacBook Air, Mac mini, and of course, Mac Studio. Now, before I hand it back to John, let's take a look at Mac Studio and Studio Display in action. (Video Presentation)

John Ternus {BIO 22135753 <GO>}

So that's Mac Studio and Studio Display. With incredible performance, extensive connectivity, and a modular design, Mac Studio with M1 Max starts at $1,999. And Mac Studio with M1 Ultra starts at $3,999. No other desktop in the world can offer this level of performance and capability at this price. And the Studio Display, with its awesome set of features, is $1,599. And it can be configured with nano-texture glass and a choice of stand options. You can order both products today and they'll be available on March 18.

Today, we built upon the amazing capabilities of M1 Max with the introduction of M1 Ultra. With its UltraFusion architecture, powerful CPU, massive GPU, and staggering memory bandwidth, it's the next giant leap for Apple silicon. And we introduced Mac Studio, which was designed to put all this groundbreaking performance right on your desk. Together with the Studio Display, these products will empower users to create the studios of their dreams and continue to change the world. And they join the rest of our incredible Mac lineup with Apple silicon, making our transition nearly complete, with just one more product to go, Mac Pro, but that is for another day. Now, back to Tim.

Timothy D. Cook {BIO 14014370 <GO>}

We've had an extraordinary relationship with the world's creative community, and the Mac has been such an important tool for these users. We're excited to bring them an entirely new system, Mac Studio and Studio Display, and to see all of the amazing things they will do with it. It's remarkable to think about the profound impact Apple silicon is having on the Mac and our other products. The A15 Bionic drives the most powerful phones in the world: iPhone 13 and iPhone 13 Pro. And today we introduced two striking new green finishes. The new iPhone SE, our most affordable iPhone, is also now powered by the incredible A15 Bionic chip. The new iPad Air takes a big leap with the M1 chip, as well as 5G, Center Stage, and beautiful new finishes.

It's truly remarkable what Apple silicon makes possible. It delivers industry-leading performance, technologies, and advancements, and the seamless integration of hardware and software enables us to provide experiences that no one else can. We look forward to seeing what our users will do with all of these incredible products and the impact they will have on people's lives. Thank you again for joining us. Have a great day.